

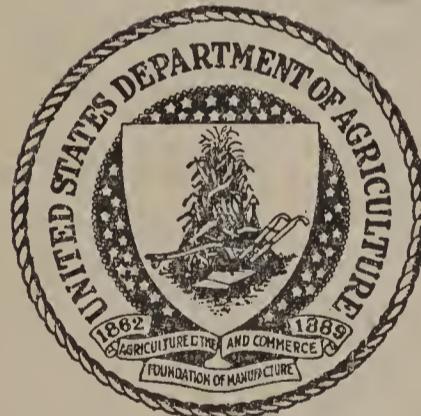
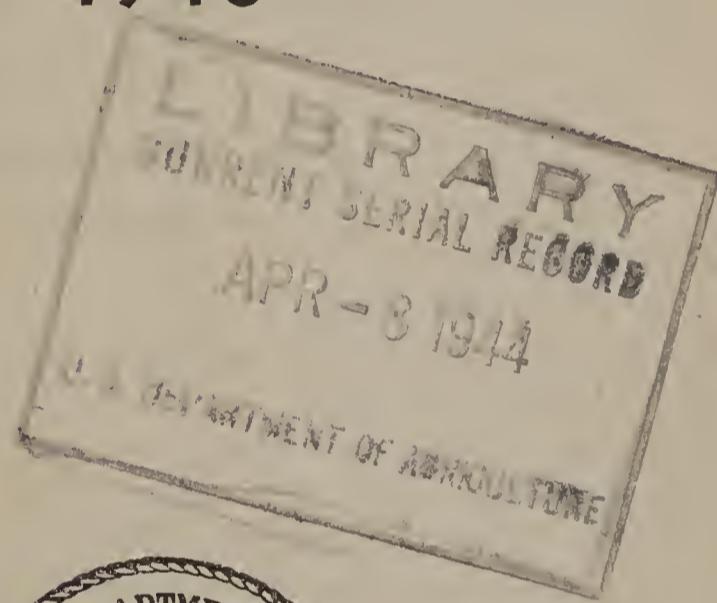
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REPORT OF THE DIRECTOR
OF THE
FOOD DISTRIBUTION
ADMINISTRATION

1943



WAR FOOD ADMINISTRATION
U. S. DEPARTMENT OF AGRICULTURE

LETTER OF TRANSMITTAL

UNITED STATES DEPARTMENT OF AGRICULTURE,

WAR FOOD ADMINISTRATION,

FOOD DISTRIBUTION ADMINISTRATION,

Washington, D. C., October 15, 1943.

HON. MARVIN JONES,

War Food Administrator.

DEAR MR. JONES: I submit herewith the annual report of the Food Distribution Administration.

During the last fiscal year we have had to bring food under more complete control than at any other time in the Nation's history. With food a weapon of war, the efforts of the Administration have been to make that weapon perform most effectively. What has been accomplished is reviewed in the report itself.

Sincerely yours,

ROY F. HENDRICKSON, *Director.*

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REPORT OF THE DIRECTOR OF THE FOOD DISTRIBUTION ADMINISTRATION, 1943

INTRODUCTION

Wartime demands have exerted an increasingly greater pressure on our food supplies. To assure fair distribution of scarce foods to civilians and to divert adequate quantities of all foods into whatever channels contribute most to the total war effort, a number of wholly new programs have been put into effect—allocation, food orders, rationing, food conservation, industrial feeding, and others. By the end of the fiscal year our food supplies, through these programs, had been brought under closer control than ever before.

Foremost among the problems of food control is the division of our supplies among the many claimants. Largest demands come from American civilians, who, with their tremendous purchasing power, could have used all the food produced for direct war use. But war needs have had to be met too. Men in our own armed forces must be fed, both at home and abroad, and stock piles must be built up for future use. The British, the Russians, the Fighting French, and others of the United Nations must be assisted. Our territories, the Red Cross, friendly nations, and occupied areas also require food.

The problem of dividing our supplies among legitimate claimants has been solved in large degree through a system of allocation. This procedure assures adequate diets to civilians, provides for the needs of our own armed forces, and makes available to our allies and certain other claimants a share of our supplies. In more detail, it provides for the appraisal of all requests for United States food supplies; the relation of total requests to total supplies; and adjustments with claimants in the light of the supply of and the demand for scarce foods.

Allocation, which has become the blueprint of the entire food distribution program, needs specific controls to assure the carrying out of the broad plan. These specific controls are food orders, which reach out and cover practically every important phase of food distribution.

Food orders, in general, exercise control at the processing level; rationing imposes control at the consumer level. Rationing tends to equalize the supply of foods among consumers and to conserve supplies over periods of time. In the case of some foods, for which the demand has greatly exceeded the supply, it has proved to be the only means of bringing about equitable distribution.

Distribution control, however, does not always assure adequate nutrition. Despite rising incomes and the ability to buy more food, civilians are finding that there are many things they do not know about nutritional qualities of foods, meal planning, food buying, cooking methods, storing, preserving, and the like. The Federal Government is taking the lead in educating civilians to the fact that it is not only *how much* but *what kind* of food that really counts.

The diets of war-industry workers, for example, have a direct bearing upon their performance and upon absenteeism. In many in-

stances, where there are new industrial plants, no feeding facilities are provided. In other instances the meals provided are inadequate. By visiting industrial areas and discussing feeding problems with management, nutrition authorities have been instrumental in having facilities installed and in improving the quality of meals served. This activity has paid tremendous dividends in relation to the small amount of Federal funds expended.

Paradoxically, as incomes have risen, the nutrition of many school children has been lowered. Many mothers have entered war industries, and many have inadequate knowledge of nutrition. It has been up to Federal agencies and community groups to step in and safeguard the well-being of school-age youngsters through school lunch programs.

A great deal is being done to educate civilians in ways and means of reducing food waste. It is estimated that 25 percent of our food is wasted on the farm, in distributive channels, or in the kitchen. Some of this waste can be stopped through educational efforts and the voluntary cooperation of food handlers, wholesalers, retailers, managers of public eating places, and housewives. Some can be curtailed through closer utilization of seasonal surpluses.

As an action phase of the food distribution program, procurement of vast quantities of food for our allies, territories, and other groups has been assumed by the Federal Government. During the 1943 fiscal year, these purchases totaled 13,319 million pounds of food and cost 1,937 million dollars. A large part of the purchases comprised animal proteins, such as eggs, dairy products, meat, and fish; but the long list also included such important items as fats and oils, fruits and vegetables, grain and cereal products, seeds, and vitamins.

Procurement involves the drawing up of specifications; price support, in some instances; expansion of processing facilities; assistance with manpower problems; the development of new processes, such as dehydration and compression; devising new types of packaging; and solving problems of transportation and warehousing. The procurement activities carried on have brought about, through industry advisory committees, a close working relationship between Government and industry—a relationship that has been invaluable in the solution of mutual difficulties.

Closely related to procurement and to the war food distribution program in its entirety are the marketing services that have been developed over the years—market reports; marketing statistics; development of uniform standards; inspection, grading, and classification; and marketing research—all of which tend to promote more efficiency in the handling of farm commodities from the field to the consumer. Much of this type of marketing work is carried on in cooperation with the States.

Providing national leadership in the food management phase of the total war food program, is the Food Distribution Administration. This agency, established December 5, 1942, through Executive Order 9280, brings together most of the governmental activities directly related to food distribution. It represents a consolidation of the Agricultural Marketing Administration; the Sugar Agency of the Agricultural Conservation and Adjustment Administration; the functions of the Bureau of Animal Industry of the Agricultural Research Administration concerned primarily with regulatory activities; the

functions of the Office of Agricultural War Relations concerned primarily with the distribution of food; and units and parts of units of the War Production Board concerned primarily with food distribution. By Executive Order 9310, dated March 6, 1943, the nutrition functions of the Office of Defense Health and Welfare Services were transferred to the Administration.

ALLOCATION

During the 1930's we believed that this country had a boundless capacity for food production. There was some basis for that belief—on the surface, at least. Up to 1941, one of our most serious problems was that of surpluses. We had more food than people were able to buy. As a consequence, prices dropped to levels that failed, by a wide margin, to give farmers a fair return on their investment of labor and capital.

To cope with the surplus problem, we initiated programs of production control—programs aimed at bringing supplies to a more comparable relation with demand. We initiated programs designed to channel surplus farm products to low-income groups; such programs as the food stamp plan, the direct distribution program, the school lunch program, the school milk program, and others. We initiated diversion programs for the purpose of finding new markets and new uses for our abundant supplies.

But gradually, as we got deeper into the war, the situation began to change. We could see that, despite record production, there would be no surpluses, aside from seasonal abundances of certain perishable products. Then shortages appeared, shortages of beef, butter, canned goods, and other foods.

These developments indicated one thing: As long as our food supplies were large in relation to demand, we could proceed on the basis of meeting all requests. But with demand much larger than supplies—despite a record production of food—a new mechanism had to be set up for apportioning supplies among legitimate claimants.

With the organization of the Food Distribution Administration on December 5, 1942, came the authority to set up the mechanism—a mechanism to make allocations of United States food supplies. In the words of Executive Order No. 9280, the Secretary of Agriculture was empowered to "Assign food priorities and make allocations of food for human and animal consumption to governmental agencies and for private account, for direct and indirect military, other governmental, civilian, and foreign needs." (This authority was later transferred to the War Food Administrator.)

With authority for allocations established, an allocation policy was developed by the FDA as follows:

(1) To provide American civilians with an adequate diet, one that at least meets the minimum nutritional requirements formulated by the Food and Nutrition Board of the National Research Council; (2) to provide our own armed forces with all the food they need, when they need it, and where they need it; this means meeting current requirements as well as building up military stockpiles at home and abroad; and (3) to go as far as possible in meeting the demands of our allies and of other groups engaged in the direct war effort.

To put this policy into effect, the War Food Administrator delegated authority to the Director of Food Distribution: (1) to assemble food requests from all "claimant agencies;" (2) to adjust them in terms of supplies; and (3) to resolve conflicts where possible. These claimant agencies, when added together, represent the demand for United States food supplies.

All claimant agencies present requirements for both current and future needs in two ways: First, for a series of four 3-month periods, and second, on an annual basis for 2 years in advance. They also present statements of justification for their claims.

With all the claims in, *Supply Estimate Committees* check on every available source of information for data on supplies available or in prospect. They scan estimates of crop production; they examine import figures; they look into the amount of food in storage; they take into consideration the number of meat animals on ranges or in feed lots; they make allowances for possible extremes of weather.

Then they make a trial balance; that is, requirements for each commodity are set down against the estimated supply. If the supply is substantially larger than requirements, there is, of course, no need for an allocation of that commodity. But if the supply is short, each claimant is asked to rejustify his food claims according to urgency and war importance. Oftentimes, the FDA suggests more plentiful foods as substitutes, but sometimes the only solution is to pare the request or cut it out entirely.

The next step is to review the trial-balance sheets, and adjustments, with the *Food Requirements and Allocations Commodity Subcommittees*. These committees, one for each commodity group, are composed of commodity specialists from the various claimant agencies. Each member specializes, not only in a commodity, but also in the need of his particular agency for that commodity. Acting as consultants, they exchange further information about the claimants' relative needs. At this point the claimants usually agree. If not, the issue is presented to the Director of Food Distribution.

The Director reviews the tentative allocations with the *Food Requirements and Allocations Committee*, of which he is chairman. This committee is composed of representatives of all claimants. These committeemen examine each proposed allocation in the light of whether it represents good United States policy. Their function, based on a broad grasp of the aims of the agencies they represent, is advisory.

The *Combined Food Board*, representing the United Kingdom and the United States, takes part in making the allocations. This board considers the food resources of the United Nations as a common pool and recommends the way in which the pool should be used to further the war effort.

When United States food allocations are a part of an international recommendation that the Combined Food Board is considering, the Director of Food Distribution instructs the United States representatives on the *International Commodity Committees* of the Combined Food Board as to the American position. In making recommendations to the War Food Administrator, the Director of Food Distribution takes into account the recommendations of both the International Commodity Committees and the Food Requirements and Allocations Committee.

TABLE 1.—Comparison of allocations and supplies of specified commodities during the fiscal year 1943

| Commodity | Unit | Allocation, July 1, 1943, to June 30, 1944 | | | | Civilian per capita consumption, July 1, 1943, to June 30, 1944, as percent of average civilian per capita consumption, 1935-39 |
|-------------------------------------|----------------|--|---------------------|---------------------------|-------------------------|---|
| | | Total allocable supplies | Contingency reserve | Military and war services | Lend-lease ¹ | |
| Meats, total | | 23,283.2 | 1,271.8 | 3,875.7 | 3,282.2 | 14,697.2 |
| Percent of total allocable supplies | | 100.0 | 5.5 | 16.6 | 14.1 | 63.1 |
| Beef | Million pounds | 8,977.2 | 771.1 | 2,098.3 | 97.0 | 5,937.5 |
| Percent | | 100.0 | 8.6 | 23.4 | 1.1 | 66.1 |
| Veal | Million pounds | 1,126.0 | 4.0 | 204.4 | 7.5 | 909.0 |
| Percent | | 100.0 | 4.4 | 18.1 | 1.1 | 80.7 |
| Lamb and mutton | Million pounds | 834.4 | 4.0 | 154.0 | 134.8 | 539.8 |
| Percent | | 100.0 | 5.5 | 18.4 | 16.2 | 64.7 |
| Pork | Million pounds | 12,345.6 | 492.7 | 1,419.0 | 3,042.9 | 7,310.9 |
| Percent | | 100.0 | 4.0 | 11.5 | 24.7 | 59.2 |
| Fish, canned | Million pounds | 723.5 | 98.5 | 102.7 | 164.8 | 337.9 |
| Percent | | 100.0 | 13.6 | 14.2 | 22.8 | 2.7 |
| Dairy products: | | 2,127.6 | 10.0 | 316.0 | 123.2 | 8.3 |
| Butter, creamery and farm | Million pounds | 100.0 | .5 | 14.8 | 5.8 | .4 |
| Percent | | 100.0 | 5.0 | 101.4 | 285.7 | 14.4 |
| Cheese, all | Million pounds | 914.6 | 100.0 | 11.1 | 31.2 | 11.1 |
| Percent | | 100.0 | 100.0 | 0 | 65.0 | 5.8 |
| Condensed milk | Million pounds | 294.3 | 11.5 | 0 | 22.1 | 2.0 |
| Percent | | 100.0 | 3.9 | 0 | 542.8 | 73.6 |
| Evaporated milk | Million pounds | 3,002.4 | 25.0 | .8 | 35.2 | 18.1 |
| Percent | | 100.0 | 100.0 | 0 | 59.4 | 40.6 |
| Dried whole milk | Million pounds | 143.0 | 0 | 0 | 41.5 | 23.0 |
| Percent | | 100.0 | 0 | 0 | 62.0 | 28.4 |
| Dried skim milk | Million pounds | 522.2 | 2.0 | .4 | 11.9 | 53.3 |
| Percent | | 100.0 | 0 | 0 | 53.3 | .9 |
| Eggs: | | 3,902.3 | 0 | 0 | 329.2 | 0 |
| Fresh and frozen | Million dozen | 100.0 | 0 | 0 | 8.4 | 6.0 |
| Percent | | 100.0 | 0 | 0 | 51.6 | 2.2 |
| Dried whole | Million pounds | 354.3 | 2.0 | 0 | 14.6 | 5.6 |
| Percent | | 100.0 | 0 | 0 | 83.3 | 1.6 |

¹ Allocations to the Office of Foreign Relief and Rehabilitation Operations are included in lend-lease.

TABLE 1.—Comparison of allocations and supplies of specified commodities during the fiscal year 1943—Continued

| Commodity | Unit | Allocation, July 1, 1943, to June 30, 1944 | | | | Civilian per capita consumption, July 1, 1943, as percent of average civilian per capita consumption, 1935-39 |
|--|------------------------------------|--|---------------------|---------------------------|------------|---|
| | | Total allocable supplies | Contingency reserve | Military and war services | Lend-lease | |
| Canned fruits and juices (excluding citrus) | Thousand cases (24/2½'s) | 61,136.0 | 3,500.0 | 24,490.0 | 279.0 | 258.0 |
| Percent of total allocable supplies | Percent | 100.0 | 5.7 | 40.1 | 5.5 | 32,609.0 |
| Citrus fruits, fresh and canned ² | Million pounds, farm weight | 13,030.9 | 173.0 | 1,924.1 | 687.7 | 53.3 |
| Percent of total allocable supplies | Percent | 100.0 | 1.3 | 14.8 | 5.3 | 9,673.5 |
| Canned vegetables including soups, baked beans, and baby foods | Thousand cases (24/2's) | 262,538.0 | 10,000.0 | 67,710.0 | 3,140.0 | 1,502.0 |
| Percent of total allocable supplies | Percent | 100.0 | 3.8 | 25.8 | 1.2 | 180,186.0 |
| Potatoes | Million pounds | 20,447.3 | 0 | 3,144.0 | 566.1 | 86.1 |
| Percent of total allocable supplies | Percent | 100.0 | 0 | 15.4 | 2.8 | 68.6 |
| Sweetpotatoes | Million pounds | 4,456.8 | 34.3 | 319.5 | 0 | 4,103.0 |
| Percent of total allocable supplies | Percent | 100.0 | 8 | 7.2 | 0 | 92 |
| Dry beans | Thousand, cwt | 22,200.0 | 383.0 | 3,588.0 | 5,549.0 | 1,380.0 |
| Percent of total allocable supplies | Percent | 100.0 | 1.7 | 16.2 | 25 | 6.2 |
| Dry peas | Thousand, cwt | 4,150.0 | 341.0 | 357.0 | 1,776.0 | 52.0 |
| Percent of total allocable supplies | Percent | 100.0 | 8.2 | 8.6 | 42.8 | 1.3 |
| Dehydrated vegetables | Thousand pounds dehydrated weight | 243,841.0 | 26,800.0 | 115,142.0 | 94,011.0 | 388.0 |
| Percent of total allocable supplies | Percent | 100.0 | 11 | 47.2 | 38.5 | .2 |
| Frozen vegetables | Thousand pounds frozen weight | 255,000.0 | 0 | 73,697.0 | 0 | 1,400.0 |
| Percent of total allocable supplies | Percent | 100.0 | 0 | 28.9 | 0 | .5 |
| Dehydrated soups | Thousand pounds dehydrated weight. | 119,556.0 | 0 | 40,566.0 | 28,267.0 | 723.0 |
| Percent of total allocable supplies | Percent | 100.0 | 0 | 33.9 | 23.7 | .6 |
| Edible fats and oils (excluding butter) | Million pounds | 6,052.7 | 40.0 | 338.6 | 1,537.1 | 179.9 |
| Percent of total allocable supplies | Percent | 100.0 | 6 | 5.6 | 25.4 | 3.0 |
| Soya flour, flakes, and grits | Million pounds | 1,350.0 | 0 | 3.3 | 984.0 | .2 |
| Percent of total allocable supplies | Percent | 100.0 | 0 | .2 | 72.9 | 0 |

² Includes concentrates or other byproducts.

After full consideration, the War Food Administrator makes the allocations. Allocations are made for 12 months in advance, but since they are determined from estimated production and supplies, they are made firm only quarter by quarter. All firm allocations must be met. Every 3 months the supply is re-estimated, and allocations are squared with expected food income.

Allocating food is a continual process of dividing the food on hand and in prospect among the several wartime claimants for it. Allocations are subject to change as military, supply, and other conditions require. That is one big reason why the wartime food situation will never be stable and completely predictable.

During the 1942-43 fiscal year, allocations were established for certain commodities in relatively short supply for the 1943-44 fiscal year. These allocations, with pertinent comparisons, are shown in table 1.

FOOD ORDERS

General realization that the food distribution program as a whole would need implementation led to the granting, in Executive Order No. 9280, of broad legal controls. In the language of the Executive Order, which in itself stemmed from authority granted the President by Congress in the Second War Powers Act, the Secretary of Agriculture was empowered to "Take all appropriate steps to insure the efficient and proper distribution of the available supply of food." Such power was transferred, by Executive Order No. 9334, to the War Food Administrator.

Out of this authority has grown a comprehensive series of food orders. These orders may include set-aside, restriction, conservation, or limitation provisions separately or in combination. Whatever their type, they insure that allocations to civilians, the armed forces, the allies, and other claimants are carried out. In other words, they enable the Food Distribution Administration to use food as it should be used in wartime—as a weapon.

From the standpoint of the direct war effort, perhaps the most important orders are those with set-aside provisions. This was demonstrated in the fall of 1942, when various measures failed to obtain needed butter supplies for the armed forces and allies. On January 6, 1943, Food Distribution Order No. 2 was issued. This order required that every manufacturer producing more than 12,000 pounds of butter in any month since January 1942 set aside at least 30 percent of his production for sale to designated Government agencies. This order was amended, effective May 1, 1943, to adjust the set-aside percentage and to incorporate certain changes which appeared desirable under the order. The set-aside was adjusted upward during seasons of flush production so that little or none need be taken in the late fall and winter months of low production, thereby keeping civilian supplies at an even keel throughout the year. FDO No. 2 worked. The Government was able to meet its commitments to the armed forces and allies.

A number of orders specified similar set-aside provisions, including orders relating to citrus juices; rice; peanut oil; cheese; raisins, dried apples, apricots, peaches, pears, and prunes; lard; canned fruits and vegetables; canned fish; meats; dehydrated vegetables; shell eggs; spray-process dried whole eggs; dry edible beans, dry peas, and split

peas; imports of coconut, babassu, or palm-kernel oils; dried skim milk; and linseed oil.

A different type of problem was attacked by Food Distribution Order No. 11, which became effective February 1, 1943. That order was designed to simplify milk handling operations so that manpower, fuel, rubber, and delivery equipment could be conserved. A second but no less important aim was to reduce marketing costs for fluid milk.

FDO No. 3 contained a provision for controlling consumption. That order prohibited canners from selling unconcentrated grapefruit juice during January, February, and March of 1943. The 1942-43 citrus crop was large and one of the main purposes of the order was to make it mandatory for civilians to utilize citrus fruits in fresh rather than in processed form. This brought about considerable savings in manpower and materials.

Sometimes food orders restrict the movement of certain foods. FDO No. 49, for example, established restrictions on shipments of potatoes from Maine or any other State specified by the Director of Food Distribution. When this order was issued, April 13, 1943, the country was experiencing a severe potato shortage and it was becoming very difficult for the armed forces to obtain supplies. By limiting shipments under the order, the procurement problem of the armed forces was solved to a considerable extent.

Some orders are designed to control disturbed marketing conditions. In December 1942, with demand far outstripping supply, many manufacturers and dealers were unable to obtain their usual share of tobacco. Without control, the tobacco-marketing system was being disrupted and the tobacco trade asked for allocation of the crop. FDO No. 4, with subsequent amendments, channeled supplies to manufacturers and dealers in accordance with their past purchases and brought order to tobacco marketing.

Most far reaching of all the food orders were FDO No's. 20, 26, 27, 28, and 48. These orders, with their amendments, affected about 700 commercial slaughterers, about 30,000 butchers, and several hundred thousand farmers. All consumers, of course, were affected by the restrictions on consumption. (For a more complete discussion of these orders, see the section on Livestock and Meat, p. 45.)

Each order is different, formulated to meet a specific need. Frequently the situation changes after an order is issued, which necessitates a change. Sometimes, because of a lack of precedent, it cannot be determined exactly what effect an order will have until it is tried, and that also necessitates occasional revisions. And sometimes, though rarely, changing circumstances do away with the necessity for an order. There are no hard and fast rules; the orders are products of situations that have arisen.

FOOD ORDER ENFORCEMENT

Food orders are effective only to the extent that their provisions are followed. Promotion of full understanding of the necessity for the various orders is one phase of the enforcement problem; prompt prosecution of willful violators is the other.

Much can be done in the way of food order enforcement by promotion of a full understanding of the need for orders and approval

of the methods adopted, rather than through indiscriminate prosecution.

This necessitates the wide distribution of orders, and explanatory information concerning them, to all members of the trade affected, as well as meetings with industry representatives and trade groups. Not to be overlooked is the need for getting the cooperation of consumers, grocers, and others indirectly affected by the orders. Trade groups are becoming increasingly cooperative in this effort.

Violations of orders in small ways generally come about through a lack of full understanding. It has been found that a personal call on a violator to discuss the ways in which he is violating an order assures, in most instances, immediate cooperation and compliance. Imposing penalties is not important; securing compliance is. In line with that philosophy, an expanded program of food order education had been mapped by the end of the fiscal year to bring about a greater degree of voluntary compliance.

But even with education, there is a small fraction of violators who must be dealt with promptly and effectively. In the case of such violators, various sanctions may be imposed—either through administrative or court action.

Administrative action may consist of a warning letter or, in more serious cases, the issuance of a suspension order. A suspension order has the effect of denying a person either the privilege of receiving, using, or delivering to another any material subject to priority or allocation control. Before suspension orders are issued persons charged with violation of food orders promptly receive full and fair hearings before representatives of the War Food Administration. Court action may result in the imposition of civil or criminal sanctions, or both.

INVESTIGATIONS

During the 1943 fiscal year, 794 investigations were made and reports prepared on alleged or apparent food order violations. Many of these cases will be carried to the courts, inasmuch as they involve major issues and large quantities of critical food supplies.

Of the 794 total, 277 or more than a third, related to FDO No. 27, which required all slaughterers to obtain permits for the slaughter of livestock for sale, required that slaughter permit numbers be marked on each wholesale cut of meat, and established restrictions and quotas governing the slaughter of livestock.

The second largest number of investigations, 194, related to FDO No. 1, which restricted the number of varieties of bread which a baker might bake or sell, prohibited consignment selling, stopped slicing of bread (a provision rescinded later), and required that all white bread be enriched to approved nutritive standards. As a means of determining compliance with the enrichment provision of this order, 324 loaves of commercial bread, purchased on the open market in various parts of the United States, were analyzed for thiamine content. It was found that 29 percent fell below the required minimum enrichment level, while nearly 15 percent indicated no enrichment at all.

The third largest number of investigations, 130, related to FDO No. 11, which provided that all handlers and distributors of milk throughout the country shall eliminate all package sizes below 1

quart, confine purchases to not more than two handlers, load milk only on advance or standing orders, discontinue returns, and charge a minimum deposit on all permanent containers.

NONCOMPLIANCE

There has been an all-too-common tendency among some firms to pay slight attention to the purchase orders issued under priorities of the Federal Government if those orders interfered with the commercial business of those firms. For example, 22 packing houses allegedly failed to supply the War Department with 3 million pounds of beef for use by the armed forces. After refusal to honor these purchase orders it was necessary to requisition the beef, and those firms which upon investigation are found to have been in willful violation will be prosecuted.

Again, in May 1943, the Army, operating under priority ratings assigned to it by the Director of Food Distribution, attempted to purchase at ceiling prices a total of 500,000 pounds of beef carcasses from eight large meat-packing companies. Four of these companies refused to deliver any beef to the Army on the grounds that to do so would have resulted in financial losses to them. Investigation by the FDA disclosed that these companies sold beef to persons not having priority ratings, in violation of FDR No. 1. The remaining four companies delivered a total of only 91,113 pounds of beef carcasses, or slightly over 18 percent of the Army's requirements, although they had sufficient quantities of meat available to fill the orders. Through cooperation of the FDA with the Army, all these orders finally were filled, but that does not preclude legal action against the offending companies.

The FDA has worked in close cooperation with other Federal agencies, particularly with the Office of Price Administration and the United States Tariff Commission. With the OPA, FDA has an agreement for the exchange of information of interest to both agencies. The United States Tariff Commission has assisted the FDA in the accounting phases of the investigations.

RATIONING

Allocation—implemented by food orders—divides our total food supply among the various major claimants. Civilian rationing carries the dividing process one step farther. It divides the civilian share of the total supply among the millions of individual consumers in the United States.

Generally speaking, the War Food Administration has been responsible for designating the commodities that should be rationed, for indicating the approximate time for rationing to begin, and for determining the amount of the commodity that was available for civilian use under the rationing program. The mechanics of rationing in general is the responsibility of the OPA. Both agencies, however, work together closely in determining the broad policies which are set up to govern the rationing programs and have cooperated closely in the periodical adjustment of point values and other details in the development of the several food rationing programs.

During December 1942, it was determined that the supply of commercially processed fruits and vegetables—canned, bottled, and frozen vegetables, fruits, juices, dried fruits; baby food; and all soups—was so small in relation to demand that rationing would have to be initiated. Accordingly, the Secretary of Agriculture, by authority of Executive Order 9280, directed the OPA to work out the details of a rationing program. In February 1943, because of extremely heavy demands for dry beans and dry peas by our armed forces and the Russian Army, the OPA was asked to add those commodities, together with lentils and dehydrated and dried soups, to the list. Rationing of these became effective March 1. Later, because of increased civilian supplies, dry peas, lentils, and dehydrated and dried soups were removed from rationing.

The meat rationing program began March 29, and, as finally evolved, included all fresh, frozen, cured, smoked, and canned meats derived from beef, veal, lamb, mutton, and pork, as well as "variety meats" and sausages; canned fish and canned shellfish; all natural and processed cheeses—but not the cottage type and cream cheeses; most edible fats and oils, including butter, lard, margarine, shortening, salad oils, and cooking oils. A few additions were made to this list later on, such as evaporated milk, condensed milk, and cream cheese.

CIVILIAN FOOD REQUIREMENTS

In making allocations to civilians, a careful course must be steered between too much and too little. With their greatly increased purchasing power, civilians would be able to buy all the food being produced on farms. If they were permitted to do this, no food would be left for the direct war effort. On the other hand, the wants and needs of our armed forces, allies, and other groups are great. To meet them all to the fullest extent would mean impairing the nutritional status of civilians with an immediate adverse effect on war production and home-front morale.

The middle course is to allocate food to civilians on the basis of needs—not wants. Thus the civilian requirement for each commodity depends largely on estimates of the physiological needs of the population as a whole, with due regard to special needs and the requirements of industry and institutions. Civilian requirements are a prime concern of the FDA, which serves as claimant for civilians in the allocation procedure.

SUPPLIES VERSUS REQUIREMENTS

Fiscal year figures are not available, but the data shown in table 2 for the 1943 calendar year indicate that the estimated nutritional value of the per capita civilian food supply for the last 6 months of the fiscal year was satisfactory and was probably better during the first 6 months. The table compares the nutritional values of the estimated 1943 calendar year food supply with figures derived from the dietary allowances recommended by the Food and Nutrition Board of the National Research Council.

The Board arrived at its allowances in 1941 after consultation with the foremost authorities in the nutrition field. Since then its

"yardstick" has been widely approved and accepted. It is the measure used by all agencies of the Government concerned with nutrition and it has been recognized by the United Nations Conference on Food and Agriculture. Canadian and British standards are essentially the same.

TABLE 2.—*Nutritional allowances recommended by the National Research Council and estimated nutritional values of the 1943 civilian food supply*

| Nutrient | Unit of measure | Recommended allowances, National Research Council ¹ | 1943 civilian food supply estimated values ² (retail-weight basis) |
|---------------------------|---------------------|--|---|
| Energy | Calories | 2,700 | 3,240 |
| Protein | Grams | 65 | 93 |
| Calcium | Milligrams | 930 | 960 |
| Iron | Milligrams | 12 | 14.7 |
| Vitamin A | International units | 4,600 | 6,500 |
| Thiamine | Milligrams | 1.5 | 2.24 |
| Riboflavin | Milligrams | 2.2 | 2.14 |
| Niacin | Milligrams | 15.0 | 18.8 |
| Ascorbic acid (vitamin C) | Milligrams | 71 | 95 |

¹ Figures were derived from the National Research Council recommended allowances for various age, sex, and activity groups by weighting them by the estimated number of persons in each group in 1943.

² July 1943.

With the exception of two nutrients, riboflavin and calcium, there is an apparent margin of safety in the nutritive values of the 1943 calendar year food supply when compared with the National Research Council's yardstick. This margin is only apparent, however, because no allowance has been made for loss of nutritional values in preparation for the table. Losses in cooking certain vegetables and meats may amount to 50 percent or more in the case of some of the soluble vitamins and minerals. Other losses may occur in peeling vegetables, trimming meat, keeping food hot before serving in restaurants and other eating places, and preparing "left-overs." The recommended dietary allowances of the National Research Council refer to total intake of nutrients and make no allowances for loss in cooking or other kinds of waste.

However adequate the supply may appear there is a further problem—that of assuring enough of certain vital foods to meet the needs of vulnerable groups. Milk is perhaps the outstanding example. Milk, for invalids, for pregnant and nursing mothers, as well as for growing children, occupies a place that no other foods can very well replace. Thus, while the per capita supply of the nutrients contained in milk for the 1943 calendar year was fairly satisfactory for the population as a whole, it is doubtful that distribution of milk was carried on in such a manner as to assure the meeting of all the special needs for milk as a food.

It has long been recognized that the physiological needs of individuals for nutrients vary substantially. Persons engaged in heavy manual labor require more calories and more of the B vitamins than do persons in sedentary occupation. The requirements of children for all dietary essentials increase with age. Thus the needs of adolescent children, particularly boys, exceed those of moderately active adults.

Women have increased needs for all of the known dietary essentials during pregnancy and lactation periods.

TABLE 3.—*Dietary allowances recommended by the Food and Nutrition Board, National Research Council*¹

| Age, sex, and activity group | Calories | Protein | Calcium | Iron | Vitamin A ² | Thiamine (B ₁) ³ | Riboflavin | Niacin (nicotinic acid) | Ascorbic acid ⁴ | Vitamin D |
|---------------------------------|----------|---------|---------|------|------------------------|---|------------|-------------------------|----------------------------|-----------|
| Man (70 kilograms): | | | | | | | | | | |
| Sedentary----- | 2,500 | Gm. | Gm. | Mg. | I.U. | Mg. | Mg. | Mg. | Mg. | I.U. |
| Moderately active----- | 3,000 | 70 | 0.8 | 12 | 5,000 | 1.8 | 2.7 | 15 | 75 | (5) |
| Very active----- | 4,500 | | | | | 2.3 | 3.3 | 23 | | (5) |
| Woman (56 kilograms): | | | | | | | | | | |
| Sedentary----- | 2,100 | | | | | 1.2 | 1.8 | 12 | | (5) |
| Moderately active----- | 2,500 | 60 | .8 | 12 | 5,000 | 1.5 | 2.2 | 15 | 70 | (5) |
| Very active----- | 3,000 | | | | | 1.8 | 2.7 | 18 | | (5) |
| Pregnancy (latter half)----- | 2,500 | 85 | 1.5 | 15 | 6,000 | 1.8 | 2.5 | 18 | 100 | 400-800 |
| Laetation----- | 3,000 | 100 | 2.0 | 15 | 8,000 | 2.3 | 3.0 | 23 | 150 | 400-800 |
| Children up to 12 years: | | | | | | | | | | |
| Under 1 year ⁶ ----- | 100/kg. | 3-4/kg. | 1.0 | 6 | 1,500 | .4 | .6 | 4 | 30 | 400-800 |
| 1-3 years ⁷ ----- | 1,200 | 40 | 1.0 | 7 | 2,000 | .6 | .9 | 6 | 35 | (5) |
| 4-6 years----- | 1,600 | 50 | 1.0 | 8 | 2,500 | .8 | 1.2 | 8 | 50 | (5) |
| 7-9 years----- | 2,000 | 60 | 1.0 | 10 | 3,500 | 1.0 | 1.5 | 10 | 60 | (5) |
| 10-12 years----- | 2,500 | 70 | 1.2 | 12 | 4,500 | 1.2 | 1.8 | 12 | 75 | (5) |
| Children over 12 years: | | | | | | | | | | |
| Girls, 13-15 years----- | 2,800 | 80 | 1.3 | 15 | 5,000 | 1.4 | 2.0 | 14 | 80 | (5) |
| Girls, 16-20 years----- | 2,400 | 75 | 1.0 | 15 | 5,000 | 1.2 | 1.8 | 12 | 80 | (5) |
| Boys, 13-15 years----- | 3,200 | 85 | 1.4 | 15 | 5,000 | 1.6 | 2.4 | 16 | 90 | (5) |
| Boys, 16-20 years----- | 3,800 | 100 | 1.4 | 15 | 6,000 | 2.0 | 3.0 | 20 | 100 | (5) |

¹ Recommended Dietary Allowances, No. 115, Reprint and Circular Series, National Research Council table 1, pp 2-3.

² Requirements may be less if provided as vitamin A, greater if provided chiefly as the provitamin carotene.

³ 1 mg. thiamine equals 333 I.U.

⁴ 1 mg. ascorbic acid equals 20 I.U.

⁵ Vitamin D is undoubtedly necessary for older children and adults. When not available from sunshine, it should be provided probably up to the minimum amounts recommended for infants.

⁶ Needs of infants increase from month to month. The amounts given are for approximately 6 to 8 months. The amounts of protein and calcium needed are less if derived from human milk.

⁷ Allowances are based on needs for the middle year in each group (as 2, 5, 8, etc.) and for moderate activity.

Further recommendations, adopted 1942:

The requirement for iodine is small; probably about 0.002 to 0.004 mg. a day for each kilogram of body-weight. This amounts to about 0.15 to 0.30 mg. daily for the adult. This need is easily met by the regular use of iodized salt; its use is especially important in adolescence and pregnancy.

The requirement for copper for adults is in the neighborhood of 1.0 to 2.0 mg. a day. Infants and children require approximately 0.05 per kilogram of body weight. The requirement for copper is approximately one-tenth of that for iron.

The requirement for vitamin K is usually satisfied by any good diet. Special consideration needs to be given to newborn infants. Physicians commonly give vitamin K either to the mother before delivery or to the infant immediately after birth.

These differences in nutritional requirements have been recognized by the National Research Council. Its recommended dietary allowances for various age, sex, and physical activity groups are shown in table 3.

As regards pregnancy, more and more evidence is being produced to show how important proper nutrition is in preventing disease and disability in both mother and baby. The magnitude of the problem is shown by the fact that there were 2,800,000 living births and about 84,000 still births in 1942. In addition, there was an unknown number of women whose pregnancy ends before the period of gestation, but the number has been estimated as 1 out of every 4, or 700,000. Some of these early terminations of pregnancy and some of these still births could have been prevented by proper nutrition. Table 4 shows the yearly amounts of the major food categories required per capita by pregnant and nursing women and by children of various age groups.

TABLE 4.—*Yearly quantities of 11 food groups, for pregnant and nursing women, and for children of different age groups¹ on moderate-cost wartime diet*

| Person or age group | Milk ² | Pota-toes, sweet-pota-toes | Dry beans, peas, and nuts | Toma-toes, citrus fruit | Leafy green, yellow vegetables ³ | Other vegetables and fruit ⁴ | Eggs | Meat, poultry, fish ⁵ | Flour, cereals ⁶ | Fats and oils ⁷ | Sugars, sirups, preserves |
|--------------------------|-------------------|----------------------------|---------------------------|-------------------------|---|---|------|----------------------------------|-----------------------------|----------------------------|---------------------------|
| Children under 12 years: | | | | | | | | | | | |
| 9-12 months | Qt. | Lb. Oz. | Lb. Oz. | Lb. Oz. | Lb. Oz. | Lb. Oz. | No. | Lb. Oz. | Lb. Oz. | Lb. Oz. | Lb. Oz. |
| 9-12 months | 364 | 26 0 | --- | 78 0 | 78 0 | 126 0 | 260 | 6 8 | 26 0 | 3 4 | 3 4 |
| 1-3 years | 260 | 26 0 | --- | 78 0 | 104 0 | 104 0 | 312 | 26 0 | 65 0 | 13 0 | 6 8 |
| 4-6 years | 260 | 65 0 | 3 4 | 78 0 | 104 0 | 104 0 | 312 | 52 0 | 91 0 | 19 8 | 26 0 |
| 7-9 years | 260 | 104 0 | 3 4 | 78 0 | 104 0 | 156 0 | 312 | 78 0 | 104 0 | 39 0 | 26 0 |
| 10-12 years | 312 | 130 0 | 6 8 | 91 0 | 104 0 | 156 0 | 312 | 104 0 | 156 0 | 39 0 | 39 0 |
| Girls: | | | | | | | | | | | |
| 13-15 years | 312 | 156 0 | 6 8 | 91 0 | 104 0 | 156 0 | 312 | 130 0 | 208 0 | 45 8 | 39 0 |
| 16-20 years | 312 | 156 0 | 6 8 | 91 0 | 104 0 | 156 0 | 312 | 130 0 | 156 0 | 39 0 | 32 8 |
| Boys: | | | | | | | | | | | |
| 13-15 years | 312 | 182 0 | 13 0 | 104 0 | 156 0 | 208 0 | 260 | 130 0 | 234 0 | 58 8 | 39 0 |
| 16-20 years | 364 | 234 0 | 26 0 | 104 0 | 156 0 | 208 0 | 260 | 130 0 | 312 0 | 71 8 | 39 0 |
| Women: | | | | | | | | | | | |
| Pregnant | 364 | 104 0 | 6 8 | 130 0 | 208 0 | 208 0 | 312 | 143 0 | 130 0 | 39 0 | 39 0 |
| Nursing | 546 | 156 0 | 13 0 | 130 0 | 208 0 | 234 0 | 312 | 156 0 | 156 0 | 45 8 | 39 0 |

¹ Adapted from Moderate-Cost Wartime Diets for Good Nutrition, prepared by Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, U. S. Department of Agriculture, March 1943.

² Or its equivalent in cheese, evaporated milk, or dried milk. 5 ounces of American (Cheddar) cheese, or 1 quart of skim milk and 1½ ounces of butter, or 3½ ounces of dried skim milk and 1½ ounces of butter, or 17 ounces of evaporated milk are about equivalent to 1 quart of fluid whole milk.

³ Such as green cabbage, kale, snap beans, carrots.

⁴ Such as apples, bananas, peaches, onions, celery, corn.

⁵ Exclude bacon and salt side.

⁶ Count 1½ pounds of bread as 1 pound of flour. Use chiefly whole-grain or enriched products.

⁷ Include bacon and salt side.

ENRICHMENT OF CEREALS

Enrichment of flour, bread, corn grits, breakfast foods is contributing substantially to the intake of thiamine, niacin, and iron. After October 1, 1943, these products will be fortified with riboflavin and increased amounts of thiamine, niacin, and iron. If all white flour were enriched and each person consumed his quota of 160 pounds per year he would secure from this source alone, the following percentages of his daily requirements based on the recommendations of the Food and Nutrition Board of the National Research Council for daily allowances for an adult male: thiamine, 49 percent; niacin, 39 percent; riboflavin, 20 percent; iron, 47 percent.

Flour and bread enrichment on a fairly large scale began in the United States in February 1941. A year later estimates indicated that at least 50 percent of the family flour and nearly as much of the white bread was enriched. In January 1943, FDO No. 1 required enrichment of all white bread. This represented about 40 million barrels of flour. Estimates of the family flour enrichment in January indicated that 75 to 80 percent of this flour was enriched, or approximately 30 million barrels. For many months the Government has been buying enriched flour for the armed forces. It all indicates that substantial progress has been made in flour and bread fortification.

It would be of additional advantage, nutritionally, if all white flour were enriched, or if all baked products made with white flour were correspondingly enriched. The way it is now, only white bread is required to be enriched under FDO No. 1. Bakers may, if they choose, enrich other breads, cakes, cookies, doughnuts, biscuits, crackers, etc. Restaurants, hotels, and institutions are not now re-

quired to make enriched baked goods. Of all the white flour used for civilian consumption about one-third is not enriched either in the mill or the bakery. Plans have been discussed whereby all white flour would be enriched, but at the end of the fiscal year, no decision had been reached as to whether or not to require this by food order.

In addition to the Federal regulation requiring enrichment of white bread, several States have passed laws for the requirement of enrichment of all flour and bread sold. Two of these States have also required enrichment of corn grits and degerminated corn meal. The Food Distribution Administration has actively encouraged the enrichment of corn grits and degerminated meal, as those products would supply a substantial amount of thiamine, niacin, and iron needed by the part of the population that consumes regularly a large amount of these products.

Vitamin and iron enrichment of other cereal foods, particularly farina and ready-to-eat breakfast foods of various types, is contributing also to the vitamin and iron intake of the population. It has been estimated that 90 to 95 percent of the nationally distributed brands of ready-to-eat breakfast foods are made from whole grain, or are enriched with thiamine to whole grain levels.

NUTRITION EDUCATION

Although there has been a remarkable increase in the awareness of the importance of an adequate diet to health, understanding of the foods that make up an adequate diet is still exceedingly limited and spotty. It is generally agreed that the small food budgets of low-income families can be made far more effective in obtaining adequate diets if the foods that can be included for an adequate diet and their relation to health are better understood. Many families in the middle- and upper-income classes are equally in need of guidance in the biological requirements for various nutritional elements and in the foods that supply these nutrients. The disappearance from the market of foods consumers have been accustomed to buying and the rationing of other foods make it all the more important for housewives to know what foods should be used to provide nutritional alternates, and how existing supplies can best be conserved.

LOCAL AND COUNTY COMMITTEES

More than 2,600 local and county committees throughout the United States, cooperating with the Food Distribution Administration, are participating in a program of nutrition education. These volunteer committees have the job of informing housewives of the principles and benefits of good nutrition and food conservation, and of initiating and furthering community efforts for the development of projects, for the improvement of nutritional status, and for saving food.

They have sponsored nutrition courses, community school lunch programs, canteen courses, and canteens. They have carried on wartime food demonstrations, set up food-preservation centers, conducted nutrition surveys, and established programs for the improvement of nutritional status. They have distributed nutrition education material (including the nutritional food chart showing the basic 7 foods), have popularized the merits of enriched flour and bread,

and have worked with the Office of Civilian Defense in training block and neighborhood leaders in good wartime food usages. They have enlisted the support of public health agencies, the food industries, and distributors in the over-all problem of promoting better nutrition. Many large industries and utilities have been of great help in forwarding the program through contributions of educational advertising, the organization of cooking schools and nutrition classes, assistance in the industrial feeding program, and other means.

The program as a whole has developed since May 1941 when the first National Nutrition Conference was called in Washington by the President. The work was carried on by the Office of Defense Health and Welfare Services until March 1943, when functions having to do with nutrition were transferred to the Secretary of Agriculture by Executive Order 9310, and placed specifically in the Food Distribution Administration.

Coordinated effort has been stressed throughout the program. The representatives of professional, civic, lay, and Government groups on both local and State committees have worked together in initiating and carrying out nutrition activities in the interest of health. Local committees tie in with State nutrition committees. State committees, in turn, work with nutritionists in the FDA's regional offices. There are 48 State nutrition committees, as well as committees in Hawaii and Puerto Rico.

CONSERVATION EDUCATION

The fundamental problem of reducing physical and nutrient waste from farm to home also has been attacked. During the last year, a broad publicity campaign coordinated with plans for community mobilization under the over-all Food Fights for Freedom program was aimed at reaching the public through the press, radio, commercial food advertising, and similar channels. Special attention was given to food waste through institutions, such as hospitals, prisons, schools, and other large-scale consumers of food. Food conservation measures in industry were promoted.

It is estimated that 20 to 30 percent of all food produced in the United States is lost or wasted between the farm and the garbage pail. These losses, which occur all along the line—on the farm; in processing plants; in transportation by rail, truck, and boat; in wholesale storage; in retail stores and restaurants; and in the home itself—are nowhere large enough to appear individually significant. It is the accumulation of little wastes and so-called unavoidable losses which contribute to the huge national total.

Analysis of the garbage-collection figures of American cities shows an average of 300 pounds per person of food refuse per year. Of this amount about 225 pounds has been estimated to be edible. Analysis of garbage composition shows that bread and bakery products constitute an important part of the food wasted, but even more significant, in view of the general deficiency of American diets in fruits and vegetables which nutritional surveys have repeatedly demonstrated, is the very high proportion of fruits and green vegetables found on municipal garbage dumps.

Wasteful trade practices in wholesaling and retailing; extravagant food handling in many restaurants and public eating places; and

careless buying, storage, and preparation in the home, together with wasteful table service and outmoded table manners, all contribute to this waste.

If by aggressive measures we can save no more than one-third of the food now being lost between harvest and garbage pails, we can add to our food supply, by this means, as much as we can hope to achieve this year through increased production alone. Mobilizing the collective "know how" of American producers, middlemen, and consumers in food saving is one of the important tasks of the FDA.

CONSUMER INFORMATION

With decreased supplies of food and increased prices, consumer information plays a more important role each succeeding week in wartime. Attention has been given the dissemination of information concerning family budget problems, food-price behavior, advice to consumers on purchasing food needs, quality selection, food legislation to insure sanitation, and legal protection against misrepresentation and short weights and measures. Activities in explanation of price control and rationing and the education of consumers as to the evils of black markets in the Nation's economy have been supported.

NUTRITION IN INDUSTRY

Hard work demands energy and physical fitness. To keep up a consistently high rate of production for war, workers must have well-balanced and adequate supplies of proteins, calories, vitamins, and minerals. The provision of such a diet is a very simple way to improve workers' health and morale, keep them on the job, and raise the production rate.

Impetus to the industrial nutrition campaign, on a national scale, comes from the Food Distribution Administration. Each of the regional offices of the FDA is staffed with industrial nutritionists who function mainly as advisers to State and local groups and agencies, such as the State and local nutrition-in-industry committees, industrial plants, and State health and labor departments. The nutrition-in-industry committees which are active in every State are composed of representatives of the State nutrition committees, State health agencies, medical and health associations, American Red Cross, and labor and industrial organizations.

The committees provide guidance on basic menu patterns and food values. They arrange for employee nutrition education through articles in plant and union magazines, posters, forums, and talks to workers by nutritionists. They try to improve food standards of workers' families by changing food habits through instructions and demonstrations to wives of workers.

The Food Distribution Administration stands ready to devise proposals for improving in-plant food service. It provides assistance in deciding the type of feeding equipment best adapted to the needs of an establishment and advises on how to obtain that equipment. The Food Distribution Administration brings to the attention of the War Manpower Commission and other agencies and consults with these agencies on problems involved in recruiting, training, and retaining essential workers in restaurants and cafeterias; with the War Produc-

tion Board on facilities; and with the Office of Price Administration on food supplies and prices in plant and nearby eating establishments.

There can be no doubt about the need for an industrial nutrition program. In a dietary survey of 1,103 aircraft workers in southern California, it was found that 56 percent of the diets were poor as regards the consumption of green or yellow vegetables; 49 percent were deficient in citrus fruit or tomatoes; 33 percent were poor in milk; 23 percent were deficient in eggs; while only 1 percent consumed meat as infrequently as twice a week. Only 2 percent of the diets contained satisfactory amounts of each of the 5 food groups, while 87 percent were definitely below the amounts recommended by the National Research Council. For most of the men, an increased consumption of milk and of citrus fruits, tomatoes, and certain green vegetables would correct the major deficiencies of riboflavin, calcium, and ascorbic acid and raise the intake of most other nutrients. It is of interest that 85 percent of the diets furnished the recommended amounts or more of protein.

For the country as a whole, the opportunity to supplement home food rations by obtaining meals in restaurants or cafeterias is not now available to industrial workers in many congested areas. It is estimated that about 9 million of our 20 million war workers are employed in plants having no eating facilities. In those plants where eating facilities do exist they are often inadequate. Moreover, community feeding facilities in many war-industry areas are greatly overtaxed. Shortages of food, labor, and facilities have caused many commercial eating establishments to either curtail their operations or shut down completely. These are the conditions the FDA's industrial nutrition program aims to combat.

THE COMMUNITY SCHOOL LUNCH PROGRAM

The community school lunch program, as it has been operated in the past, encountered many difficulties during the 1943 fiscal year. Early in the year it became apparent that the increasing shortage of certain foods, together with difficulties of transportation, warehousing, and distribution to the operating units, would severely restrict operations. The variety of the foods that could be offered for distribution decreased rapidly, and the inability of State welfare departments to make satisfactory distribution further hampered schools in the operation of the program. The situation was further aggravated when it was announced that Work Projects Administration aid to the program would be withdrawn. The WPA had not only furnished cooks and other helpers for thousands of projects but also supplied the bulk of the workers in the State warehouses from which distribution of food-stuffs was made to the schools.

The increased demand for the program indicated that its value far transcended the immediate benefits to farmers from the removal of agricultural surpluses, and because of this evidence the FDA took steps to change the operation of the program in conformance with changing agricultural conditions. Under the new program sponsoring agencies could enter into an agreement with the FDA, whereby the sponsor would be reimbursed by the FDA for the purchases of designated foods bought by the sponsor from local growers, whole-

salers, or retailers up to a maximum amount determined by the type and number of lunches served.

Any public or nonprofit private school or child-care center is eligible to participate in the program as long as the need for Federal assistance in order to serve nutritious lunches to all children is apparent. Although the program is not limited to children from low-income families or to low-income schools, obviously it is desirable to give assistance where the greatest need exists. However, Federal funds available for the program will probably not be adequate to grant aid to all schools that will be in need of a lunch program or which may request Federal assistance.

In line with the principles of good nutrition, the rate of indemnity will be in proportion to the nutritive value of the lunch and the number of children served. Children unable to pay will be served without charge or at less than cost, and no distinction will be made between those who pay and those who do not.

FDA will reimburse for three types of lunches. Type A is a complete lunch to give the child from one-third to one-half of his nutritive requirements for the day. Type B is a somewhat smaller lunch. Type C lunch consists of milk only, the school milk program, popularly called the penny milk program, having been made a part of the school lunch program this year.

The new school lunch program was inaugurated in February and schools were transferred to it as rapidly as possible, with preference being given to those schools in areas where the direct distribution of commodities was being immediately discontinued. By April 1943 the program covered 6,000 schools which were serving an average of 726,000 children per day at a monthly cost to the FDA of \$405,000.

Regular direct distribution of commodities to schools was discontinued by the end of the school year. Maximum participation for the year under the direct-distribution phase of the school lunch program was reported in February, when foodstuffs with an estimated retail value of \$4,900,000 were donated for lunches served to 5,300,000 children in 73,000 schools. This was a 14-percent decrease from the highest month in the previous fiscal year in the number of children served.

Aid to school lunch programs had been given in the past, without specific authorization, as a part of the surplus removal and price support programs. By the close of the fiscal year, however, Congress authorized the use of \$50,000,000 for the school lunch program during the 1944 fiscal year.

Under the 1944 fiscal-year program, the FDA plans to follow the same general procedure started in February. Reimbursement is made by FDA on receipt of a simplified report of operations on which food purchases are shown. Payment may be claimed for purchases of milk and cheese; fruits and vegetables; meat and poultry; eggs; dry beans and peas; soybeans; peanuts and peanut butter; butter, margarine with added vitamin A, lard, and other cooking fats and oils; and cereals.

THE SCHOOL MILK PROGRAM

Started on an experimental basis in 1940, in a few areas, the school milk program was designed originally to divert milk from manufacturing uses to fluid use for two reasons: First, fluid milk customarily

returns a higher price to producers, and second, to improve the nutritional status of children participating in the program. The program was expanded during the 1943 fiscal year and a peak number of participants was reached in April 1943, when the FDA was paying part of the cost for a half pint of milk for over 2 million children a day. Cost of the program was about \$4,500,000 compared with \$1,500,000 the previous year.

Under this program, the FDA entered into contracts with local sponsoring agencies (school authorities, civic clubs, or other nonprofit groups), who became responsible for the local management of the program. The sponsor purchased the milk and distributed it to children at a charge of not more than 1 cent per half pint. Provision was also made for milk to be served free to children who were unable to pay.

Upon the sponsor's showing that he had purchased and distributed the milk in accordance with the agreement, he was reimbursed by the FDA at the producer price of milk in his area. Thus the FDA paid for the unprocessed milk and the processing and handling costs were paid by the sponsor and the child.

With the school milk program scheduled to be merged with the community school lunch program during the 1944 fiscal year, it is believed that emphasis on the broader aspects of feeding will contribute to the aim for healthful nutrition for school children. However, where it is desired, schools may continue their milk program as a Type C school lunch. FDA participation in such a program is limited to 2 cents per one-half pint of milk served rather than to the producer cost of the milk as in the past.

COMMUNITY FOOD-PRESERVATION PROGRAM

During the past year, when wartime demands on the Nation's food supply were heavy, community food-preservation centers played an important part in preventing waste of garden produce and in insuring stores of nourishing food for home and school use.

In order that facilities might be available for community food-preservation activities, the FDA purchased all the available equipment formerly used on food-preservation projects of the WPA and lent it to sponsors of community canning and school lunch programs. In addition, arrangements were made with the War Production Board for the release of critical materials for the manufacture of community-size equipment. Applications for this equipment were referred to the FDA by the WPB for approval in order that the FDA's technical knowledge of canning equipment might serve as a gage in determining the applicant's need of the amount of equipment requested to operate the plant efficiently and to insure equitable distribution of equipment throughout the country.

THE FOOD STAMP AND DIRECT DISTRIBUTION PROGRAMS

The food stamp program was inaugurated in May 1939 to increase consumption of surplus foods, and, at the same time, to improve the diets of families who otherwise could not get enough to eat. The food stamp program was an outstanding success. It helped to bridge the gap between surpluses on the one hand and want on the other. At

its peak in 1941 it gave assistance to 4 million people and served to move large quantities of agricultural commodities.

It became apparent early in the 1943 fiscal year that the situation which brought this program into being no longer existed. Most food surpluses had disappeared, and critical shortages of some foods seemed inevitable. The program was accordingly discontinued in March 1943.

Some direct distribution of commodities purchased by the FDA continued to the end of the fiscal year. Potatoes, for example, were purchased during the spring of 1943 and a part of those that could not be canned, dehydrated, or otherwise processed went into relief channels or were donated to various institutions. This type of distribution of seasonal or local abundances will probably continue periodically for the duration of the war as certain commodities reach peak production and cause gluts in marketing or processing channels. The FDA will continue to meet these local and temporary situations in part by direct purchase and distribution.

FOOD-STAMP INVESTIGATIONS

Before its discontinuance the food stamp program was operating in 362 areas with more than 4,000,000 persons participating. As is to be expected in any financial program which affects a large number of persons, a certain amount of fraud was connected with it which required numerous investigations. Out of a total of 51,699 investigations and test purchases during the fiscal year, 29,777 resulted in administrative action; 209 criminal convictions resulted in jail sentences totaling 42 years and 134 years of suspended sentences; fines totaled \$26,000; reimbursement to Government totaled \$17,902 for claims found to be false; and savings to the Government as a result of disallowed claims totaled \$452,120. Action was pending at the end of the fiscal year on a number of investigations.

FOOD PROCUREMENT

Food procurement is the FDA's largest "action" program. Actually, it is more than a single program; by its sheer immensity it is a combination of many programs—price support, the development of new processing techniques, new packages, expanded processing and storage facilities, standardization and inspection, food orders, rationing, labor recruitment, and many others.

The 13,319 million pounds of food purchased during the 1943 fiscal year, while not a substantial percentage of our total supply, in itself represented an enormous quantity (table 5). This becomes apparent when that volume is translated into ordinary terms. For example, it represents more than 330,000 railroad carloads. If each train hauls 100 carloads, it represents 3,300 trainloads. If each ship carries 5,000 tons, it represents 1,300 shiploads.

Cost of the 13,319 million pounds, on an f. o. b. basis, was 1,937 million dollars—which means that the FDA's daily food bill during the year averaged a little more than 5 million dollars. The price of all commodities purchased averaged 14½ cents a pound although there was a striking difference in cost between some individual items.

Cracked wheat, for example, cost a little above 2½ cents a pound; rare vitamin B₆ hydrochloride cost \$700 a pound.

TABLE 5.—*Purchases of the Food Distribution Administration by commodities, quantity, and cost, 1942 and 1943 fiscal years*

| Commodity | 1942 | | 1943 | |
|------------------------|--------------|---------------|--------------|---------------|
| | 1,000 pounds | 1,000 dollars | 1,000 pounds | 1,000 dollars |
| Dairy and poultry... | 2,577,176 | 489,486 | 831,368 | 415,557 |
| Meats... | 1,188,155 | 353,558 | 1,986,216 | 621,500 |
| Fish... | 165,984 | 22,396 | 397,586 | 65,767 |
| Fats and oils... | 675,484 | 85,576 | 1,429,536 | 204,740 |
| Fruits... | 925,370 | 40,235 | 825,063 | 85,855 |
| Vegetables... | 759,126 | 30,589 | 1,330,060 | 83,755 |
| Grains and cereals... | 1,453,534 | 36,199 | 2,265,889 | 87,562 |
| Seeds... | 31,847 | 13,337 | 58,493 | 13,718 |
| Soya products... | 69,790 | 3,149 | 215,640 | 9,631 |
| Vitamins... | 750 | 1,914 | 2,977 | 11,964 |
| Miscellaneous foods... | 497,722 | 22,097 | 2,888,493 | 122,376 |
| Nonfoods... | 976,568 | 174,788 | 1,087,581 | 214,084 |
| Total... | 9,321,506 | 1,273,324 | 13,318,902 | 1,936,509 |

Principal items stocked by the FDA during the year were cheese, dried eggs, dry skim milk, evaporated milk, pork, salmon, lard, oleomargarine, dried beans, dried peas, flour, rice, and sugar. These 13 items alone accounted for 7,861 million pounds out of the 13,319 million pound total. The complete list, however, contained more than 300 items, including such important additional products as canned Army rations, linseed oil, fresh and processed vegetables, fresh and processed fruits, seeds, soya products, vitamins, raw cotton, and tobacco (the latter two being "food" by official definition).

PROCUREMENT POLICIES

Because of the tremendous volumes of food needed, it is impossible to buy in small quantities and fill requirements on time. Thus, most purchases are made from cooperatives, commercial processors, and distributors. Large purchases of dairy products continued to be made, for example, through the Dairy Products Marketing Association, an organization of regional dairy marketing cooperatives that has been assisting the Department of Agriculture since 1938 in operating its purchase and stabilization programs. In addition, the FDA purchased natural cheese on the Wisconsin Cheese Exchange as well as process cheese, dried skim milk, evaporated milk, sweetened condensed milk, and dried whole milk directly on the markets. Dried eggs were purchased largely on a contract basis from approximately 120 plants, most of which had been placed in operation since early in 1941.

In special cases, however, smaller lots are purchased. For example, the FDA at two times during the fiscal year had a standing offer in the Southern States to buy eggs in lots of 10 cases or more at a fixed price. In some instances, too, it is necessary to buy commodities that are in seasonal abundance to avoid food waste. Several thousand carlots of early potatoes were bought in North Carolina and Virginia during the year and were diverted to canners, dehydrators, starch manufacturers, and relief agencies.

Most products are bought on the basis of specifications. Purchases are made on the basis of United States grades in all cases where official

standards have been set up. This means Federal or Federal-State inspection of all purchases to make sure that the products meet the quality standards outlined in the contract. The inspection, under supervision of the FDA, generally is made before delivery, at the seller's plant or warehouse.

NEW FOODS

A few "new" foods were purchased during the year.

One was Cvinaya Tushonka, a highly nutritious and palatable pork product for Russian army field rations. Tushonka is prepared almost exclusively for the soldier who is remote from his supply base and must have a quick pick-up of protein food to keep him physically fit for battle. In preparing this product, packers put two to four pieces of lean, boneless pork in a 1-pound can. Seasoning includes onions, salt, pepper, and at least one whole bay leaf or its equivalent. The can also contains a substantial amount of lard or rendered fat from the cooking operation, or a combination of such pork fats. The product is packed for overseas shipment in special solid-fiber containers, suitable for the long trip under difficult conditions.

A new fish food that has been developed is canned menhaden, processed from a fish of the herring family. These fish are the most prolific in Atlantic coastal waters and some experts believe they have a good chance of rising to third place as a source of canned fish food—just behind canned salmon and California sardines. Until recently, the principal use of menhaden has been for oil and for poultry feed; they haven't been popular for human consumption because of their oil and the large number of bones they contain. But a special process has been developed to get around these difficulties—a process that gets rid of the excess oil and reduces the bones to the crunchy but easily edible consistence of the bones in canned salmon. At the end of the fiscal year, the product had passed tests by food experts of the Department of Agriculture and of the British Food Mission, and several thousand cases were in production for the allies.

Very greatly increased quantities of soya products were purchased—including beans, flour, and grits. Soya protein is "good" protein—good in the sense that it contains amino acids similar to those in meat. The British and Russians use soya products as meat "extenders," in bakery goods, in soups, and as milk substitutes. The United States got into the production of soya products rather late—the Germans, for example, had huge stocks of soybeans built up 3 or 4 years prior to the outbreak of hostilities in 1939. But this country is rapidly catching up, production of soya products expanding phenomenally during the fiscal year.

Nutritional yeast tablets are a new development among the vitamins. These tablets contain 40 to 55 percent protein and about 35 percent carbohydrates. They are rich in vitamins B₁ and B₂, as well as calcium, phosphorus, iron, copper, nicotinic acid, and amino acids. Food yeast, from which the nutritional yeast tablets are molded, is grown in cultures that are fed on molasses—or the yeast can be processed as a byproduct of the brewing industry from residues that might otherwise be wasted.

One development in connection with tobacco procurement was the purchase of large quantities of twist for allied soldiers in the south-

west Pacific area. Natives of New Guinea, the Solomon Islands, and New Britain use twist for money—passing it from hand to hand the way Americans pass dimes and dollars. Better than money in the jungles, the tobacco is used by the soldiers to barter with the natives for foods or services.

CONSERVATION OF SHIPPING SPACE

Shipping space still was a major problem during the year and a record volume of dehydrated foods was purchased. Included on the list were dried milk—both skim and whole—dried eggs, meat, vegetables, and soups.

Since January 1943, approximately 60 plants have been approved for expansion or conversion to vegetable dehydration work, making a total of 174 plants now approved for operations. Since the beginning of the program, approximately 50 other plants were approved but withdrew before beginning construction. But plant production capacity of dehydrated vegetables has been increased from 25 million pounds per year on July 1, 1942, to an estimated capacity on July 1, 1943, of more than 200 million pounds—at least an eightfold increase.

Dehydrated pork was the result of the need for conserving shipping space, tin, and other strategic materials and for furnishing a meat product that could be stored safely under varying conditions of temperature and humidity for long periods of time. The FDA co-operated with the Agricultural Research Administration and with the meat industry in developing specifications and methods of manufacture. All of the product manufactured to date has been packed in tin cans in sizes varying from approximately 1 pound upwards.

Alternate materials for the manufacture of containers have had to be found and specifications have had to be developed to fit the new materials and the new types of foods being developed. Broad basic patterns for containers were established. With the cooperation of industry and through extensive laboratory experiments and test shipments, new containers were developed and improved to meet specific needs as they arose. Important progress has been made in making food shipments more compact through the use of specially designed containers.

INVESTIGATIONS

Purchases by the FDA have involved hundreds of commodities procured from all sections of the United States. Some purchases have been made directly from producers, others from middlemen, and others from processors; in fact, purchases have been made from any source from which the products could be obtained. Some contracts have been for the entire output of a plant or for the entire production of a producer, whereas others have been for whatever part was immediately available. Various types of purchasing arrangements have been utilized. One of the most complicating factors has been the demand for the utmost speed in the delivery of products.

In many instances it has not been possible to exercise the usual business precautions as the FDA has had to purchase available amounts at prevailing commercial prices. As might be expected, there have been instances of unreasonable charges and the delivery of products which were substandard.

In view of the situation, a definite program has been set up for the purpose of suppressing and preventing fraud, hoarding, and profiteering in all aspects of the food distribution program. The FDA has taken the position that the necessary haste with which commodities have had to be purchased does not preclude later action to correct irregularities.

FRAUDS

Investigation of frauds in connection with FDA purchases has been extensive and numerous cases have been prosecuted. The following cases are illustrative of those handled:

An investigation of several companies supplying dried-egg powder to the Government disclosed that the companies, acting in collusion with certain warehousemen, delivered large quantities of the product previously rejected by Federal inspectors. On April 30, 1943, the Attorney General announced the indictment of two of the companies and eight of their officers on charges of theft, embezzlement, conspiracy to defraud, and submitting false claims. The total alleged fraud in the indictments amounted to more than \$1,000,000. The case is scheduled for trial in Federal court.

An investigation of a company supplying pork and soya links to the Government disclosed that although more than 5,000 damaged cans had been rejected, the damaged cans were mixed with good ones. A shortage of more than 800 cans also was discovered in the shipment. When the facts were brought to light the company paid the FDA almost \$4,000 to cover the irregularity.

A warehouseman was required under the provisions of his contract with the Government periodically to turn (to reverse the position of the can) evaporated milk which was in storage. Investigation disclosed that the milk was marked at the time it was stored to indicate that it was turned and that the company had claimed payment for services which were never performed. Payment has been refused, of course, and criminal prosecution is under consideration.

EXCESSIVE PROFITS

It is difficult to determine whether participating companies are obtaining excessive profits from Government contracts, for the procedure necessary to such a determination is often intricate and involved.

The FDA has found its task of preventing profiteering an arduous one. The FDA has no authority to renegotiate contracts and is unable to recover excessive profits when they are found. Much can be done, however, in the way of preventing future profiteering by a close study of what constitutes a fair return.

During the last year the FDA undertook a survey of the purchases it had made from March 1941 to May 1943. From this survey it developed that, although hundreds of kinds and grades of commodities had been purchased during the period, 20 principal groups of commodities combined to constitute more than 90 percent of the purchases made in the period. Similarly, it developed that, although hundreds of suppliers had furnished commodities during the period, a much smaller number had furnished the large bulk of them.

The FDA then proceeded to survey the price situation with respect to like commodities in the 20 groups and to inquire into the cost and

profit position of the principal suppliers. The surveys were rapidly nearing completion at the close of the fiscal year. As results become available, procurement officers are advised of instances where unreasonable profits have accrued as a result of past purchases or are likely to accrue to the supplying companies from new contracts under consideration. Through this method the FDA is able to effect material savings to the Government, because it has found that most firms willingly revise their contract prices downward when the excessive character of their prices and profits is revealed.

CUSTODY AND DISPOSITION

The Food Distribution Administration has responsibility for the custody, safekeeping, and disposition of all commodities procured and for formulating programs and operating methods which will permit (1) movement of commodities from producers' or processors' plants as soon as available to avoid interference with production; (2) delivery of required commodities and quantities to meet ocean-shipping schedules; and (3) storage of the difference between production- and shipping-schedule requirements in such a manner as to insure the commodities' being in proper position for subsequent movement to the ports or points of consumption at a minimum of expense with due regard to the safekeeping of the commodities.

During the fiscal year 1942-43, the Food Distribution Administration received into inventory 5,907,595 net long tons having a monetary value of \$1,936,507,836, of which 4,056,063 net long tons were delivered to recipient nations or programs.

At the close of the fiscal year, a residual inventory equaled 2,324,626 net long tons. This represents an increased volume of approximately 25 percent over that of the previous year. During the fiscal year the FDA opened 11 new offices and revised and improved the techniques of existing field offices to expedite the flow of shipping instructions to vendors and warehouses, which in turn speeded up the flow of commodities and documents to the ports or other points of delivery.

In the last fiscal year approximately 11,000 loss and damage claims were prosecuted and recovered from vendors, warehouses, and common carriers amounted to \$1,000,000 with many claims still being processed. Many special concessions have been secured from common carriers under Section 22 of the Act to Regulate Commerce—with a resultant saving which must be substantial but cannot be estimated—and these have greatly facilitated operations.

Damaged cargoes of agricultural products to the extent of 35,661,934 pounds were handled in salvage operations with the result that 20,080,304 pounds were redelivered to lend-lease programs; 1,650,496 pounds were destroyed because they constituted a menace to the public health; 7,460,852 pounds were sold because, after reconditioning, the packages were not suitable for re-export; 5,710,515 pounds are now being reprocessed; 768,587 pounds are being offered for sale; and 1,680 pounds represent losses or shortages due to distressed vessels discharging hurriedly and under unfavorable conditions. The proceeds of sale were approximately \$1,067,101.54.

The rationing program required the Administration to assume responsibility for issuing ration-point checks to cover the purchase of rationed commodities for all programs and the collection of ration-

point checks for delivery to nonexempt agencies. Operating units were established in Washington and New York to service this program.

Custody and disposition work is roughly analogous to the work of the retail store, which stocks and turns commodities over to its customers. And customers of the FDA were many. On the basis of deliveries during the fiscal year—not purchases—FDA food was distributed as follows: To the British (the United Kingdom, Mandates, Dominions, Colonies, and military and naval outposts), 52.62 percent; to the Russians, 22.15 percent; other lend-lease (Greece, Yugoslavia, Poland, Turkey, the Netherlands, the French Committee of National Liberation), 2.99 percent; Caribbean emergency program (Puerto Rico, Virgin Islands, British Caribbean possessions), 7.35 percent; Territorial emergency program (Hawaii), 2.67 percent; relief (community school lunch program and direct distribution program), 3.68 percent; cash sales (Government agencies—Department of the Interior, the Army, Navy, Marine Corps, Veterans Administration; and others—friendly governments—Sweden, Switzerland, Dominican Republic; Red Cross, commercial firms), 8.54 percent.

FOOD FOR OUR ALLIES

With American farmers turning out a much bigger volume of production during the 1943 fiscal year, with more new ships being built, and with fewer submarine sinkings, the aid we were able to give our allies was much greater than during the 1942 period. Foodstuffs and other agricultural products delivered at shipside for export to our allies totaled in round numbers 7,652 million pounds, compared with about 5,769 million pounds the previous year.

Of this total, 5,372 million pounds went to the British, an increase of 230 million pounds over shipments the year before. It should be noted, however, that shipments to the United Kingdom (England, Scotland, Northern Ireland, and Wales) showed a sharp decrease. The British, through their own efforts, have become more nearly self-sufficient. This has enabled them to turn larger quantities of foodstuffs over to the dominions, colonies, mandates, and military and naval outposts.

The United Kingdom's food supply comes not only from this country, friendly foreign nations, and parts of the British Empire, but also to a great extent from within the island's boundaries. Most of the arable land in the British Isles is under cultivation. Government subsidies have raised farm output to capacity and have brought previously uncultivated land into large-scale production. In the main, British agriculture is concentrated on such long-keeping bulk crops as potatoes and grains. The Victory Garden program—British version—also has succeeded in contributing substantially to food supplies.

While in the United Kingdom the food we send is used by both civilians and the armed forces, food sent to Russia is used almost solely by the Russian Army. Deliveries to representatives of the Soviet Union showed a great increase over the previous year—about 2,017 million pounds in 1943, compared with about 619 million pounds in 1942. Russia's need was greater.

About 40 percent of the richest agricultural territory in the USSR has at some time been overrun by the Nazis, with many sections kept

from production by scorched-earth practices. German occupation of the Ukraine for the third consecutive growing season cut the Russians off from the grain normally produced in this vast Russian bread-basket. Severe food shortages also resulted from Nazi occupation of the fertile North Caucasus in the summer of 1942.

We began shipments of food to civilians in North Africa in December 1942, a month after American and British troops landed there. War had seriously disrupted regular imports and distribution channels. Supplies of clothing, machinery, and food were badly needed. Under an arrangement whereby the French authorities paid us cost plus handling charges, we sent about 158 million pounds of flour, milk, sugar, wheat, tea, seeds, soap, and tobacco.

The North African Economic Board, composed of British and American authorities, supervised distribution of these supplies to minimize profiteering by local merchants and to stabilize retail prices. While much of the food reached civilians through regular retail channels, milk for children and food for inhabitants of Tunisian cities were distributed free by the Office of Foreign Relief and Rehabilitation, working through the Board. We also took steps to restore North Africa gradually to self-sufficiency in food and even to make possible production of a surplus to supply part of the food requirements of our military forces there and in nearby areas.

About the same procedure was applied to the distribution of about 25 million pounds of foodstuffs shipped to the Dakar region of French West Africa. The rice, semolina, farina, whole wheat, corn grits, green tea, milk, sugar, and lactated flour we sent to help feed the workers in this important edible-oil-producing area contributed to an increased supply of these oils for the United Nations.

Under the Lend-Lease Act, we sent more than 2 million pounds of food, in the form of prisoner-of-war packages, for Yugoslavs interned by the Axis. These were delivered to Marseilles and Lisbon and their distribution was arranged for by the Red Cross.

We also sent food to feed Polish refugees in Russia. Dried whole milk, evaporated milk, fats, dried beans, dried soup, flour, enriched cereal, cocoa, ascorbic acid, and vitamin capsules were shipped to Russia in convoy and there distributed by representatives of the Polish Government in Exile. To simplify distribution and storage, these shipments for mass feeding were later displaced by standard 11-pound war food packages.

To the starving people of Greece we began last December to ship dry beans and peas, sweetened condensed and evaporated milk, and dried soup. Sent as a lend-lease operation, the food went first to the Swedish Consul in Canada, and then, under safe conduct in Swedish relief ships, to Athens. At Athens it was distributed by the Swedish-Swiss Relief Commission and the American Red Cross. We also sent wheat to Turkey (a neutral country) to replace the grain Turkey had furnished Greece to relieve starvation.

It is true that tons of food which might have fed many thousands of hungry people have been sent to the ocean floor in the fierce and continual battle along the sea lanes. The last year, however, marked the turning point in our favor; the submarine menace began to subside as new methods of dealing with underwater raiders were developed. Furthermore, allied ship launchings began late in 1942 to

exceed sinkings, with mass-production Liberty ships coming off the ways in record time. So, compared with the huge quantities we have succeeded in delivering, losses at sea have been small. In addition, we have salvaged considerable food from torpedoed ships that have put back into port for repair.

As reverse lend-lease, Australia and New Zealand supply meat, fruit, and vegetables to American forces in the southwest Pacific, despite shortages of some foods for civilians. In the British Isles, every supply and service has been provided that could be provided. Through reverse lend-lease we have used British and Russian ships as troop transports, have repaired and serviced our ships in United Nations ports, have received materials and assistance in building American camps, and have been supplied with uniforms and weapons of various types.

FOOD FOR PRISONERS OF WAR

One food package per week for each American prisoner of war is the goal of the American National Red Cross. The Food Distribution Administration made available to the Red Cross more than 28 million pounds of foodstuffs during the past year.

Food value is the first consideration of the Red Cross in making up the packages. The recommended daily allowance of specific nutrients for a sedentary man as set up by the National Research Council is used as the yardstick for determining the food needs of each man. The food items are then selected to make up almost total deficiencies of protein, fats, minerals, and vitamins in the prison diet. Because the prison camp ration can be expected to provide some calories, the latter are not given the same emphasis as minerals and vitamins, which are important in preventing deficiency diseases.

The standard prisoner-of-war food package is as follows:

| Standard Prisoner-of-War Food Package: | Content | Quantity |
|--|---------|----------------------|
| Jam | tin | 1 ounces 6 |
| Milk, whole, powdered | do | 1 do 16 |
| Cheese, American | pkg | 1 do 8 |
| Oleomargarine with vitamin A | tin | 1 do 16 |
| Pork luncheon meat | do | 1 do 12 |
| Corned beef | do | 1 do 12 |
| Liver pate (not purchased by FDA) | do | 1 do 6 |
| Salmon | do | 1 do 8 |
| Sardines | do | 1 do 4 |
| Prunes, dried | pkg | 1 do 16 |
| Biscuits (K-2 improved) | do | 1 do 7 |
| Sugar | do | 1 do 8 |
| Chocolate | bars | 2 do 4 |
| Coffee, soluble | tin | 1 do 4 |
| Soap | bars | 2 do 4 |
| Cigarettes | pkgs | 3 do 2 $\frac{1}{4}$ |
| Matches | do | 3 do $\frac{1}{2}$ |
| Ascorbic acid tablets (50 mg.) | pkg | 1 tablets 7 |

The Red Cross must assume that facilities for preparing food—even in the simplest ways—are lacking, though it is taken for granted that the prisoners have water for reconstituting the milk, orange juice, and coffee. Otherwise, no food is sent that cannot be eaten as it is taken from the package. The dried milk powder will make a gallon of milk when reconstituted. The orange juice concentrate

can be mixed with water and used as orange juice or spread on crackers like a marmalade. In either case it is a fine and palatable source of vitamin C, the scurvy preventive.

The Red Cross tries to send foods that are familiar to the American diet and that would appeal to American war prisoners. Food preferences based on reports from the International Red Cross are considered and although it is not possible to cater to individual tastes, foods that have general acceptability and that are familiar are chosen.

It should be noted, however, that the contents of the food package are changed at intervals. As new and better methods of processing are developed, foods that contribute more in the way of flavor and food value are added to improve the package.

Packages are made of cardboard, 5 by 9½ inches. On the top are the words, "American Red Cross Prisoner-of-War Package—for Distribution Through International Red Cross Committee." Each package contains suggestions for use, printed in seven languages, and a card that must be signed by the recipient.

The packages are prepared by volunteer workers in centers located in Chicago, St. Louis, Philadelphia, and New York City. Supplies move to their destination on boats chartered by the International Red Cross and on Swedish and Portuguese boats.

The Red Cross also supplies its many canteens and distributes food in various theaters of war, the food being shipped from the United States.

In addition to foodstuffs for the American Red Cross, the FDA made available to other relief organizations the following quantities: Canadian Red Cross, 138,388 pounds; Hadassah, Inc., 50,697 pounds; and Russian War Relief, 616,816 pounds.

FOOD FOR THE CARIBBEAN AREA

The Caribbean emergency program consists of two distinct operations: (1) Direct shipments from the continental United States to Puerto Rico and the Virgin Islands, and (2) shipments through the Santiago stock pile to Puerto Rico and the Virgin Islands, as well as to British, Dutch, French, and independent possessions in the Caribbean area.

During the 1943 fiscal year more than 313,000 net short tons of foods, seeds, feeds, and agricultural chemicals and supplies were handled under the Caribbean emergency program, plus about 47,000 tons in commercial shipments. Most imports were directly from the continental United States; some originated in the Dominican Republic; others originated in Cuba; some few cargoes originated in Haiti; still others that originated in the United States were transported by a land-water route through Cuba, Haiti, and the Dominican Republic to Puerto Rico.

Use of the land-water route was a precautionary measure to provide an emergency means of supply which could be more fully employed in event the submarines succeeded in blockading direct shipments from the United States. This route was necessarily expensive; it caused additional handling, longer transit periods, and need for fumigation and reconditioning en route and after arrival at destination. The submarine menace was largely eliminated by the end of the

fiscal year and it is believed that from now on the Caribbean area can be supplied with essential agricultural products.

Puerto Rico was the major beneficiary under the Caribbean emergency program, that island having received more than 90 percent of the supplies shipped to the Caribbean area during the year. And Puerto Rico's need was the greatest. Conditions were desperate in September 1942, when, with customary imports of rice, codfish, milk, lard, and other foods cut off, starvation threatened the islands.

It should be pointed out that Puerto Rico always has been vulnerable to food shortages. About 2 million people live on the island, which is not much larger than the State of Delaware, and the native economy has never managed to achieve any measure of self-sufficiency. The Puerto Ricans have one main cash crop—sugar—and they grow a little coffee, tobacco, and coconuts; but they cannot produce their most necessary foods. When submarine sinkings reached critical proportions—at the time commercial ships were transferred to other theaters of war—a bad food situation became worse.

Under the Caribbean emergency program, some shipments of food reached Puerto Rico in July, August, and September of 1942. Most of the items, however, were not the kinds, or quantities, that normally would have been imported. Accelerated arrivals of merchandise began in late October, and by the end of the 1943 fiscal year, stock piles of the types of food usually consumed on the island were equal to a 10 to 12 weeks' normal-consumption supply. There is good reason to believe that danger of shortages of essential foodstuffs during the war period have been averted.

In handling the distribution of foodstuffs on the island, regular trade channels are used. Wholesalers buy all FDA merchandise, except for minor quantities sold to consumers' cooperatives, governmental agencies, and nonprofit institutions—and special items sold to the bakery industry for production of bread, pastries, macaroni, spaghetti, crackers, and similar products.

Merchandise normally is distributed by the trade in the easiest manner possible to secure maximum return and benefit through minimum expense and effort. This results, during times of scarcity, in depriving supplies to outlying areas. Although not wholly successful, the new policy of placing merchandise at strategic points with respect to trade areas, and of making apportionments to wholesalers on the basis of population and consumption requirements, as well as of relative size, has lessened greatly the hardships experienced by consumers.

Food imports by Puerto Rico have been augmented substantially by food produced on the island under an agricultural support program. The program operates under the direction and supervision of the FDA, as a result of agreements entered into between the FDA, the Department of the Interior, and the Governors of Puerto Rico and the Virgin Islands. Funds of the Department of the Interior are used to cover all administrative costs and expenditures for the purchase of farm produce offered.

Before the establishment of this program, farmers had to depend on their own resources for protection against speculators. The intervention of the Federal Government with its minimum price program provided the protection needed. Now the farmer is assured of a

market and stable prices for his produce. As soon as there is a temporary surplus of production or when regular buyers do not pay the minimum price set by the Government, the farmer goes to the FDA marketing centers where he receives the support price.

A market news service was started in January 1943, for the purpose of circularizing throughout Puerto Rico daily information on agricultural prices and conditions in the main markets of the island. Radio, newspapers, and the mails are all used in the dissemination of this information. These daily reports, issued from Rio Piedras, Ponce, Mayaguez, Aguadilla, and Arecito, are serving as an index for all market activities and are being used to advantage in the development of the price-support program.

Commodities have been furnished for relief feeding since August 1938. FDA donates the food with the provision that disposal will be accomplished in accordance with FDA requirements; the Puerto Rico Commodity Distribution Agency, an entity of the Insular Department of Interior, receives the foods from FDA and acts as insular "sponsor" in supervising distribution. The insular sponsor uses labor furnished through a project of the Federal Works Agency for accomplishing distribution throughout the island. Local municipal governments supply many of the commissaries and warehouses used for storage and distribution. Allocations of foods to this program are accompanied by written notices which place maximum limitations on the rates at which foods may be distributed to recipients. The main groups of eligible recipients are needy families, each of which is individually certified as being eligible by social workers of the insular sponsor, in accordance with the FDA requirements.

The community school lunch program provides lunches each day to all eligible children in schools having facilities for preparation of meals. FDA commodities are supplemented to a limited extent by donations, local government purchases, and fresh vegetables from the WPA gardening project.

Milk is distributed through volunteer workers under the Office of Civilian Defense to provide needy children below school age with some amount of food. Milk, and in some instances, cereals, are furnished each day to these children, who flock to the stations. Contributions from the public and gratuitous labor of women make operation of the program possible.

In summary, basic food essential to life has been available to meet current requirements and has been stock-piled for emergency needs. The cost of living has had some stabilization so that sustenance can be secured with minimum effects of speculation and marketing abuses. The needy receive some essential foods in addition to that they can obtain through their own resources. Farmers, through the efforts of the production agencies and by the encouragement of marketing services and support of prices, are producing more for themselves and for the feeding of their neighbors. The over-all food program in Puerto Rico has as its objective the raising of the standard of living. In several important respects that objective has been accomplished.

FOOD FOR HAWAII

On December 15, 1941, just a week after the attack on Pearl Harbor, a program was set up to keep the civilian population of the

Hawaiian Islands supplied with food. In view of the blitz and the strategic location of the islands, martial law was put into effect, and the major part of the civilian food program—known officially as the Territorial emergency program—was carried on for a time in close cooperation with the armed forces. But during the 1943 fiscal year, the handling of food for civilians was largely turned over to the Director of Food Control, a representative of the civilian Governor.

During the last year, the program was handled as follows: The Director of Food Control, working in cooperation with the FDA representative, transmitted monthly requirements to the mainland. With a revolving fund of \$35,000,000, enacted by Congress under Public Law 371, FDA purchased and shipped foods designated by the Director of Food Control. Foods shipped by FDA were those which island importers could not guarantee to bring in and maintain in reserves on the islands as determined by civil and military authorities as being necessary. A reserve of staple commodities was and is maintained over and above current requirements to meet emergency situations which might arise.

The FDA actually functions somewhat as a jobber for the islands. The food is sold to wholesalers on the basis of total cost—original cost plus transportation and storage charges. The Office of Price Administration exercises control over wholesale and retail prices; that is, it establishes a fixed mark-up over total costs laid down in the islands. In general, food prices in the Hawaiian Islands are 6 to 7 percent higher than in continental United States—approximately the extra cost of getting food there.

Deliveries of food to the islands during the 1943 fiscal year totaled 138,164 short tons. These deliveries consisted of the following major food categories: Dairy and poultry products, 11,211 tons; meats, 5,344 tons; fish, 2,135; fruits, 827; vegetables, 11,058; and grains, 107,589 tons. As in the case of Puerto Rico, there has been an extensive effort to increase the production of food on the islands. Vegetable production, in particular, has been increased far above usual levels.

OTHER FOOD-SUPPLY PROGRAMS

In its capacity as wholesaler, the FDA sells considerable quantities of food to other Government agencies, being reimbursed by those agencies for funds expended. Sales also are made on the same basis to friendly governments and commercial concerns.

Through the mechanism that has been set up to handle food under the Lend-Lease Act, the FDA is able to procure supplies quickly and efficiently for other Government agencies. The same is true of transactions for friendly governments, who, with their usual source of supply cut off, must turn to the FDA for assistance.

Large quantities of "set-aside" food have been sold to the armed forces. Other sales have been made to the Department of the Interior for its Alaskan and Indian Service programs; the War Shipping Administration for use on American and other merchant vessels; the Veterans Administration for use in hospitals; the Panama Railroad for use on trains, by railroad employees, and for sale to civilians in the Canal Zone; the Rubber Development Corporation for use of parties gathering natural rubber in Central America and

South America; the Public Roads Administration for use of the men building the road from Mexico through Central America; the Coordinator of Inter-American Affairs for seeds for use of South American republics. Such sales to other Government agencies totaled about 453 million pounds during the year.

Friendly governments have asked us to turn food over to them on a cash basis. Making such requests are Canada, the French Committee of National Liberation, the Government of Bahama, the Governments of Northern and Southern Rhodesia, the Icelandic Purchasing Commission, the India Supply Mission, the Netherlands Purchasing Commission, Sweden, and Switzerland. Sales to these governments totaled 208 million pounds, mainly vital foods that could not be obtained elsewhere or foods needed promptly for emergency use.

Some sales have been made to the American Trans-Pacific Corporation, the Moore-McCormack Lines, Tobacco By-Products and Chemical Corporation, Inc., as well as to various concerns canning fish. Sales to commercial firms have been handled on a cash basis, the food being used by ships' crews or by workers engaged in processing or otherwise handling agricultural products. Sales of this type totaled 182 million pounds.

COOPERATION WITH THE FOOD TRADE

Under wartime conditions, a large part of the food that goes to our armed forces, our allies, and other groups outside the country must be specially processed. It must be canned, frozen, dried, dehydrated, or cured so as to hold up under difficult conditions of shipping and storage. The huge volume of production needed—food processors today are turning out quantities that would have seemed fantastic a few years ago—has led to the development of some complex problems.

Like the farmers, members of the food trade have had to cope with labor shortages, container shortages, and transportation shortages. Some processors even have run into shortages of sugar, fats and oils, spices, flavors, and other scarce foods needed in the manufacture of factory-prepared products.

Other difficulties could be cited but they would add up to the same thing; that is, the industries that are processing or otherwise handling food should have assistance to an extent comparable to that given the farmers who produce raw agricultural commodities. The work of the food trade is an extension of the production job begun on the farm.

INDUSTRY ADVISORY COMMITTEES

Because the War Production Board's policy and procedure regarding industry advisory committees had proved to be a fair and effective method of contacting industry, the same general system was put into effect by FDA during the year. Under the FDA's program, as finally formulated, the food industry advisory committees consider problems from a broad industry viewpoint and take up problems affecting individual companies outside of committee meetings. Their functions are purely advisory and consist of supplying information, giving advice, and making recommendations to the Government—all final decisions and subsequent action emanating from the Government. By

confining their activities in this manner, no violation of the antitrust laws is involved.

At the close of the fiscal year, 69 food industry advisory committees had been formed within FDA, covering the following segments of the food trade:

Dairy and Poultry Products

Canned poultry.
Cheese.
Dried milk.
Evaporated and condensed milk.
Ice cream.
National poultry and egg industry.
Poultry and egg processing.

Dry-corn millers.
Dry beans and peas.
Field seed.
Vegetable seed.

Livestock and Meats

Meat canning.
Natural casing.
Livestock and meats.

Fats and Oils

Castor oil crushers and processors.
Cottonseed and peanut oil mill.
Edible oil refining.
Fatty acid.
Grease oil producers.
Linseed crushers.
Margarine.
Mayonnaise and salad dressing.
Soap and glycerine.
Soybean processors.
Sulphonated oil manufacturers.

Special Commodities

Precooked-cereal baby food.
Distilled spirits.
Baking powder.
Bar and general line confectionery.
Cocoa and chocolate.
Coffee.
Macaroni, spaghetti, and noodle.
Packaged goods confectionery.
Spice.
Tea.
Soft drinks.
Wine.
Brewing.
Yeast.
Honey.
Flavorings and extracts.
Peanut food.

Sugar

Beet-sugar processing.
Cane-sugar refining.
Industrial sugar users.
Louisiana cane sugar refining.

Tobacco

Flue-cured tobacco.
Tobacco manufacturing.

Marketing

National retail.
Wholesale food distributors.
Refrigerated warehouse.

Grain Products

Baking.
Breakfast cereals.
Corn-products refining.
Rice milling.
Wheat-flour milling.
Soya flour.

When it was found that much time was consumed in gathering certain types of information from committees, the "task group" procedure was set up. Through this procedure, the Government chairman addresses a letter to a few committee members asking them jointly to send in a report containing the desired information. If recommendations are made by a "task group," such recommendations are not considered expressions of industry's views until discussed with the entire committee.

The principal subjects discussed by committees are proposed food orders or amendments to existing orders. New orders or amendments to old ones are usually submitted to the committee sufficiently in advance of clearance so that changes recommended by the industry may be incorporated. Nearly all of the present food orders have been so discussed.

Sometimes committees recommend the issuance of a new food order or request official action. The corn products refining committee, for example, saw an impending corn shortage and called it to the attention of the Food Distribution Administration. Remedial action followed.

Committee meetings also provide an opportunity for industry to present its case where undue hardship is involved. And the meetings give industry a chance to ask for assistance with such problems as manpower, transportation, raw materials, prices, maintenance and repairs, and operating supplies. It is established policy that meetings will be called when requested by members.

Obviously food industry advisory committees cannot take the place of trade associations, which operate as business-promotion and education groups. They cannot take over the policy-making or regulatory powers of the Government. There is a broad field in many food trades, however, where a representative trade group acting with Government cooperation can do much to bring individual industry members into closer touch with the war work of the industry as a whole, and with problems of the Government as they relate to the war.

FINANCING OF PROCESSING PLANTS

Rapidly expanding needs for processed foods have brought about a considerable increase in the number of new plants in operation. While most of these have been financed with private capital, commercial financing not always has been forthcoming. For that reason, the FDA embarked on a program during the year for financing the construction of new plants in areas where they were badly needed and could be operated efficiently.

Funds furnished by the Office of Lend-Lease Administration through June 30, 1943, totaled \$10,700,000. Out of this money, \$9,915,359 was spent for the construction of 49 processing plants, as follows: Dairy products, 19; dehydrated vegetables, 8; dehydrated raisins, 19; dehydrated apples, 1; and citrus concentrates, 2.

Lend-lease financing of projects is undertaken only after investigation discloses that construction of the plant through private or commercial financing would be impracticable. If the proposed plant or project is found by the FDA to be essential to the war food program, it is thoroughly studied from such angles as location, especially with respect to availability of supplies; production capacity; type of construction; conservation of materials; and efficiency and experience of proposed management.

If satisfactory from all standpoints, the project is approved and funds are allotted to cover the estimated cost, while the priorities necessary to build are recommended to the War Production Board. As soon as the preference rating order is issued, the applicant proceeds with construction. Title is taken and payment made by the

Government upon completion. In the meantime an agreement is drawn between the applicant and the Department of Agriculture whereby the applicant leases the facility upon completion for a sufficient length of time—5 or 10 years—to permit reimbursement of the total cost in the commodity or in cash. When installation of machinery only is financed, the applicant pays only for the use of such machinery.

Lend-lease projects during the year provided approximately 20 percent of the increase in plant capacity in the case of dry skim milk; 19 percent of the increase in dehydrated-vegetable plant capacity; and 60 percent of the increase in plant capacity for turning out dried raisins.

APPLICATION FOR PRIORITIES

During the year, more than 83,000 applications for priorities of various types were acted upon and cleared with the War Production Board. In the main, these priority applications involve new materials or new projects needed to maintain or increase production of processed foods.

USED EQUIPMENT

The FDA cooperated with the War Production Board to locate available used machinery and equipment, and maintained a list furnished periodically by large-scale dealers of used equipment throughout the United States. The equipment listed included used boilers and accessories, electric motors, starters, Diesel engines for power units, refrigeration equipment of all types and sizes, retorts, vacuum pans, steam jacketed kettles, homogenizers, compressors, fans, can fillers, and many other items used in food processing. Large quantities of this used equipment were placed in use in the food industry.

MANPOWER PROBLEMS

A shortage of labor in the food-processing field was a major problem during the year. Many skilled workers were attracted to the more glamorous war industries, where the rates of pay were higher and the work was of a year-round character. Others went into the armed services.

Low wages paid by the food industry were a major handicap, complicating the task of obtaining labor. To check the progress of wage-adjustment applications, and to expedite consideration of these applications by regional war labor boards, a working relationship was established between the FDA and the National War Labor Board. This became necessary because Executive Order No. 9250 stabilized the wages that employers could pay employees at the level of wages in October 1942.

The FDA cooperated with the Director of Economic Stabilization in formulating directives, issued in May 1942, authorizing the War Labor Board to grant certain wage adjustments to processors of perishable foods and feeds. Under these directives, food industries have continued their efforts to raise their wage level to the level of industrial establishments, and thus enable them to recruit the labor necessary for handling their seasonal packs.

Contact also was established with the War Manpower Commission and National Selective Service to enable the FDA to assist food industries in solving recruitment and deferment. Recruiting of workers for food industries is a function of the U. S. Employment Service, which has cooperated with the FDA in securing workers whenever possible.

The FDA, through the War Food Administration, is represented on the essential activities committee of the War Manpower Commission. This committee prepared a number of bulletins listing activities and occupations considered essential to the war effort. Efforts have been made to clarify the designation of certain industries as essential and to determine when additions are necessary. Relations were established with the War Manpower Commission which enabled the Food Distribution Administration to secure immediate decisions regarding activities considered to be included under the various general items in activity and occupation bulletins.

Letters were sent to various regional and national associations of food processors informing them that the War Manpower Commission has specifically included their type of food processing as an activity essential to the war effort. Employees of these industries were urged to remain on their food-processing jobs. Clarification indicating that registrants engaged in activities or occupations not listed as essential could be granted occupational deferments was also obtained from the National Selective Service System. Such clarification was especially important because food processing had not previously been recognized as essential.

Representatives of the FDA have appeared before the essential activities committee and presented their case. Standards are being prepared for the War Manpower Commission regional offices to be used in designating food distribution as "locally needed." This designation in certain areas will aid retail and wholesale food merchants in overcoming their most acute labor problems.

In cooperation with National Service Headquarters and the War Manpower Commission, information was sent to food industries explaining the purpose and the preparation of manning tables and replacement schedules. These are intended to provide a basis for the withdrawal from industry of workers eligible for military service, at a rate which will allow others not suitable for active service to replace them.

To assure continuous production in vital food industries, arrangements were made with the Department of Labor and the War Labor Board so that a competent labor councilor would be at the scene of a threatened strike within 24 hours after reports were received by the FDA. These arrangements for preventing work stoppages and strikes in food industries have proved very effective. Experience indicates that chances for a quick settlement of labor disputes are much better before than after an open break takes place, and emphasizes the importance of information about these situations being promptly available.

WEEK-END ADVERTISING

The FDA feels that the week-end placement of food advertising by grocers is contributing substantially to their manpower problems.

A study of advertising placement in 10 large cities showed that 60 percent of retail-grocery advertising appears on Thursday. More than 86 percent of the advertising is done on Thursday and Friday. Monday, Tuesday, and Wednesday are all very light advertising days, and Saturday is the lightest of all.

This concentration of advertising placement results in a surge of buying at the end of the week. So grocers must obtain part-time help; a strain is put on their delivery system; the spoilage of food, through improper handling, rises appreciably; and consumers themselves receive poor service.

To combat the late-in-the-week advertising habit, the FDA distributed information through various channels pointing out the advantages of spreading the advertising over the neglected early days of each week. At the end of the year, this campaign had begun to show results. Two grocery chains reported that they were able to reduce their Friday and Saturday business from 74 percent of their week's volume to less than 50 percent. And their over-all tonnage of sales showed a very substantial increase.

THE VICTORY FOOD SPECIAL PROGRAM

The Victory Food Special program, begun during the 1942 fiscal year, was carried on vigorously during the 1943 period. Under this program, the FDA sponsored merchandising campaigns to push the sale of food in seasonal abundance during the periods when heaviest supplies were scheduled to arrive on the markets. The Victory Food Special was featured in store advertising and in special displays designed to encourage increased sales to consumers.

In determining when to hold the merchandising drive for each Victory Food Special, the FDA aimed to have the dates coincide with the availability of heaviest supplies on consumer markets. This meant that for a farm product distributed nationally or over a wide region, the merchandising drive was conducted 7 to 10 days after harvesting in the production area.

Announcement of the merchandising campaigns to the trade far enough in advance of their actual dates permitted wholesale and other buyers in the producing areas to make their purchases at about the time of heaviest harvestings in anticipation of the drive. This also helped them build up demand from grocery stores and aided them in planning their retail sales promotion.

Grocers' sales efforts were backed up by information supplied by the FDA, calling the attention of consumers to the Victory Food Special being featured. This information was widely distributed for use by the food trade, home economists, market reporters, editors of women's pages, radio-station directors, and others who put out information for consumers.

"Drives" carried on during the year included the following products and areas covered: Tomatoes, June 29, 1942-July 4, 1943 (national); beets and snap beans, July 6-11 (the Northeast); broiler chickens, July 16-July 25 (national); peaches, July 16-August 5 (national); cheese, August 17-August 29 (national); tomatoes, August 24-September 5 (the Northeast); apples, September 17-September 26 and October 22-October 31 (national); cabbage, September 28-October 10 (the East); tree nuts, November 9-November 21 (national); tan-

gerines, December 3–December 12 (the East); grapefruit, December 3–December 12 (national); dry edible beans, January 18–January 23 (national).

Increasing demand for most foods and higher prices led to a sharp de-emphasis of the Victory food special program after January. In view of the changed conditions, a new program was outlined by the end of the fiscal year known as the Victory food selection program. Similar to the old program in some respects, the Victory food selection program was designed to emphasize only the most serious seasonal abundances, with particular stress on the avoidance of food waste rather than price support. Another important difference was the provision that Victory food selection programs could be initiated within the various regional offices of the FDA by producer and marketing groups and carried on as regional programs—a provision, it was felt, that would lend greater flexibility to the particular food-distribution problem encountered.

ARMY-NAVY "E" AWARD

Recognizing that food processors are making an extremely important contribution to the war effort, the chairman of the Army-Navy Board for Production Awards gave the FDA the privilege of nominating food-processing plants for the Army-Navy "E" award. Plans were moving forward rapidly at the end of the year for making awards, and a number of plants nominated for the award were being checked to determine whether or not they were eligible.

WFA ACHIEVEMENT "A" AWARD

An award also was outlined for seasonal food processors, who, because of the short period that their plants are in operation, have not been considered as being qualified for the Army-Navy "E" award. This award is known as the War Food Administration Achievement "A" award. As in the case of the "E" award, plans were being made at the end of the year for checking nominations and for making the presentations.

TRANSPORTATION

The Food Distribution Administration conducts the transportation rate and traffic work of the Department of Agriculture, proceeding both formally and informally with the railroads and rate-making bureaus in obtaining new rates, rate adjustments, transit arrangements, etc., and presenting matters to the Interstate Commerce Commission involving rates, rules, regulations, and practices on behalf of producers and shippers of agricultural products.

Also handled by the FDA are transportation priorities, to assure that essential products are handled first. New work developed during the year was in the field of transportation conservation—aimed at making the best use of all transportation facilities.

RATES AND SERVICES

Early in 1942 the railroads requested a general increase of 10 percent in all freight rates in order to cover higher wage rates and other operating costs. The Department of Agriculture took the position

that no general increase in rates was necessary for agricultural products because the higher wage costs would be more than offset by increased tonnage to the railroads. After hearings on this matter, the railroads were granted, on March 18, 1942, an increase of 6 percent on freight rates for most commodities, and an increase of 3 percent on agricultural commodities.

The Food Distribution Administration and the Office of Price Administration in a detailed analysis presented to the Interstate Commerce Commission early in 1943, showed that the new revenue of railroads had increased substantially during the preceding year, and that continued high production in agriculture and the manufacturing industries indicated that railroad revenues would continue at a level which would amply cover the current operating costs and leave more than a normal profit margin. It also showed that agriculture was forced to accept less service from the railroads but that agriculture nevertheless was being called upon to pay a higher freight bill.

The study concluded that the 3-percent increase in agricultural freight rates in 1942 was unnecessary and that it was one of the many factors which was hindering the food production and distribution programs. The FDA urged that "freight rates on all agricultural products and foods, including livestock and livestock products, and including processed foods as well as unprocessed farm products, be so adjusted that they are no higher than the rates which existed at the beginning of 1942."

The petition of the FDA was successful. The Interstate Commerce Commission suspended all increases for the period from May 15 to December 31, inclusive, 1943. This represented an immediate saving of approximately \$75,000,000 annually in freight rates to agricultural producers.

It is conservatively estimated that during the fiscal year, the FDA was instrumental in establishing more than 280 new and separate adjustments of one kind or another. In addition to effecting great savings for agriculture, these rates enable many new commodities to move, such as fertilizer compounds from several Canadian points to destinations in the United States; second-hand wooden containers for fruits and vegetables from eastern markets to southern producing sections; and several different raw agricultural materials for the manufacture of synthetic rubber. At the end of the fiscal year about 150 rate adjustments were pending.

PRIORITIES

During the year, the Office of Defense Transportation advised the Food Distribution Administration that there was danger of a transportation stringency and requested that a priority list applicable to the transcontinental movement of agricultural products be drawn up in advance. The task was divided into two parts: (1) Development of a priority list for general application, from which other priority lists could be developed to meet specific emergencies; and (2) development of a priority list covering the movement transcontinentally and within Mountain-Pacific territory. The rating of individual food items was governed principally by the factors of nutrition, perishability, and economy of shipping space. If and when applied, the FDA will

handle applications for the movement of necessary shipments under permit.

CONSERVATION

Transportation conservation is new but highly important work of the FDA. Activities in this field have been a combination of research and action programs—research being required to ascertain the facts upon which could be based solution to practical problems.

Policies have been developed along the following lines:

1. Foreseeing, through analyses of traffic conditions, where and when traffic congestion, shortage of equipment or fuel, or other factors interrupting the transportation of food and agricultural commodities would develop.

2. Devising means of conserving transportation to avert the imposition of embargoes or priorities, by diversion of commodities into other than usual channels of distribution, by restricting cross hauling or movements for excessive distances; and using other agencies or means of transportation to take the load off the congested transportation facility or type of equipment.

3. Formulating priorities and planning of orders for transportation controls.

At the close of the fiscal year, statistical research was completed or in progress on transportation of fats and oils, beer, salt, tobacco, and canned goods. Other work included administration of WPB Order No. T-1 and Transportation Request No. 2 as they apply to food products; studies of flour milling in bond at Buffalo, N. Y., cross hauling of grain products, heavier loading of freight cars; as well as liaison activities with other Government agencies.

WAREHOUSING

Storage was a major problem during the last fiscal year. While production of most farm products was being carried on at record levels, a shortage of materials and labor prevented the expansion of warehouse facilities at a comparable rate. Several tight situations developed because of a shortage of storage space, transportation difficulties, and other factors.

A survey of total commercial grain storage space as of February 1942, for example, showed that space would be inadequate to meet needs, and a program was initiated to encourage the holding of grain in farm storages, the expansion and efficient utilization of all existing storage facilities, the use of emergency storage, and the control of the movement of grain. Through the operation of this program, the grain-storage problem never reached serious proportions during 1942-43.

In the case of vegetable oils, a survey showed that the over-all storage capacity was adequate to meet over-all requirements but that some control over the movement of vegetable oils was needed to avoid local emergencies. Movement to "tight" areas was retarded; thus excess capacity available in other areas was utilized more efficiently. During the peak storage period, the Food Distribution Administration became a clearing house for information on the tank-storage capacity both for Government and commercial interests. The basic data collected are still available and may be used again should the occasion arise.

PRIORITIES FOR STORAGE FACILITIES

Under the controlled materials plan, the Food Distribution Administration gathers information and estimates the needs for expansion, replacement, and maintenance, repair, and operations for the cold-storage and dry-storage warehousing programs. From these estimates of physical need, made 12 months in advance, estimates of controlled materials are prepared each quarter for the ensuing four quarters. Separate estimates are submitted for the cold-storage and dry-storage programs.

Each application is carefully analyzed from the standpoint of the necessity for the facility or equipment, its relation to the war effort, and the possibility of conversion or substitution of other facilities or materials of a less critical nature. After the necessity is clearly established, the materials and equipment are carefully "screened" to insure that the minimum amount of critical materials is used. More than 350 applications for priority assistance were reviewed, analyzed, and recommended for approval or denial last year.

Under Section 124 of the Internal Revenue Code, facilities which are built or expanded directly for the war effort, may, upon certification by the Secretary of the Navy or the Secretary of War, enjoy certain privileges of tax amortization. Applications for certificates of necessity for facilities for the cold-storage, dry-storage, and ice-manufacturing industries are referred to the Food Distribution Administration for recommendation.

UNITED STATES WAREHOUSE ACT SUPERVISION

Work in connection with the administration of the United States Warehouse Act continued along lines similar to those of the last 25 years, consisting largely in licensing warehousemen storing certain basic commodities, and inspectors, samplers, weighers, and graders of such commodities.

Two principal purposes of this act are to provide safe storage facilities for agricultural products and to give producers and merchandisers of agricultural products a form of warehouse receipt which can be generally used for collateral purposes. Table 6 compares the licensed storage capacity for the various products on June 30, 1943, with that on June 30, 1942.

TABLE 6.—*Storage capacity licensed under the U. S. Warehouse Act, by commodities, 1942-43*

| Commodity | Unit | Licensed capacity, June 30, 1942 | Licensed capacity, June 30, 1943 |
|-------------------|------------|----------------------------------|----------------------------------|
| Cotton | Bale | 10,234,316 | 10,387,853 |
| Grain | Bushel | 241,850,185 | 257,696,314 |
| Wool | Pound | 39,469,000 | 50,138,710 |
| Tobacco | Pound | 359,645,400 | 148,578,900 |
| Nuts | Ton | 25,700 | 27,000 |
| Broomcorn | Bale | 14,500 | 14,500 |
| Beans | 100 pounds | 765,607 | 925,050 |
| Sirup | Gallon | 487,640 | 747,240 |
| Dried fruit | Pound | 2,922,000 | 2,922,000 |
| Cold-pack fruit | Pound | 6,313,950 | 6,313,950 |
| Canned foods | Case | 3,780,000 | 3,665,506 |
| Seeds | 100 pounds | 546,082 | 693,302 |
| Cherries in brine | Pound | 9,923,043 | 12,071,043 |

LEND-LEASE WAREHOUSE SUPERVISION

A plan was developed and inaugurated for the investigation of all warehousemen with whom the Food Distribution Administration already had contracts, and of warehousemen who were seeking contracts. This plan included a careful examination into the reputation and financial responsibility of the warehouseman, determination as to whether his facilities were adequate and proper for the storage of particular commodities which the Department had to offer, and a careful analysis of his method of operation.

Last year the FDA made examinations covering more than 1,300 warehouses throughout the United States. It has made original investigations to determine whether the warehousemen were competent and the facilities adequate, has checked into the storing of the commodities that the Food Distribution Administration had entrusted to the warehousemen, and has inspected the stocks in the warehouses to determine their condition. As a result of these investigations Government contracts with some 10 to 20 percent of the warehousemen were permitted to expire or were revoked or the goods shipped from these warehousemen to other warehousemen who possessed better facilities or greater financial responsibility or whose storage practices were more acceptable.

Because of the scarcity of space the FDA has had to permit some products to remain in undesirable storage, but as soon as better space becomes available, products will be moved from warehousemen whose facilities cannot meet FDA standards.

To hold losses of food products while in storage to a minimum is imperative under existing conditions. Through this warehouse supervisory work the FDA has headed off in inceptive stages deterioration of many valuable food products.

MARKET ORGANIZATION AND FACILITIES

Restrictions on construction make it almost impossible to renovate or build new market facilities, while the greatly expanded production of food and war supplies for ourselves and our allies has created many storage problems, both local and national. Thus, it has been necessary for the Food Distribution Administration to concentrate on the warehousing part of the work and to pay less attention to the market-facility program than it has done in the past or than its long-range importance warrants. In spite of the present situation, however, real progress has been made.

Last year a study of concentration markets for perishable products in the Southeast was completed. One of the places where it was recommended that a market was urgently needed was in Augusta, Ga. At the city's request, the Food Distribution Administration made a study of the needs of the community and the type of facility that should be constructed. There was some delay in making financial arrangements and the plans had to be revised to comply with orders for the conservation of critical materials, but construction was begun. The new market consists of farmers' sheds and a few stores for dealers. The present development, however, is only a part of the projected plan and it is contemplated that the facility will be expanded at the close of the war.

In cooperation with city officials and a representative of Texas A. and M. College, an investigation was made of market conditions in the city of Dallas, Tex. As a result of this investigation, a bond issue was voted for constructing a new market and plans were developed for making modifications within the existing market area. Although the work was delayed for a time because of the difficulty in obtaining materials, the addition has now been completed and is open for business.

Plans are being made for a post-war market facility program which will result in improvement of existing facilities when they are inadequate, and the construction of new markets in areas where they are needed.

COMMODITY PROGRAMS

The war food management programs of FDA vary in their application to each commodity group. Procurement for lend-lease, territories, and other purposes, inspection, grading, regulatory acts, food orders, supply information, and pricing information are managed by commodity branches, in most cases through FDA regional offices.

A detailed discussion of the special problems of each commodity group in meeting war programs is basic to a full account of the activities of the FDA. Reports on the work of each commodity branch follow.

LIVESTOCK AND MEAT

Throughout the 1943 fiscal year, the demand for meat at prevailing prices was much larger than the supply. Military and allied demands combined were more than 7 billion pounds; and at the ceiling prices set by the Office of Price Administration, it was estimated that civilians would have consumed about 20 billion pounds. Compared with the total demand for about 27 billion pounds of meat, supplies approximated 23 billion pounds.

MEAT RESTRICTION ORDER NO. 1

Thus the big job of the FDA, in cooperation with other Government agencies, was to restrain civilian demand on the one hand in order to meet direct war needs of our armed forces and allies on the other. The outlines of the job became apparent by July and August of 1942, when it was decided that the most equitable method of reducing civilian consumption was by means of a rationing program. (See p. 10.) It was felt, however, that setting up a meat-rationing program would involve much loss of time, and that a substitute should be formulated until meat rationing could go into effect. So the FDA, in cooperation with the Office of Price Administration, the War Production Board, and the armed services, worked out Meat Restriction Order No. 1 (MRO-1).

Authority to issue and administer restrictions on civilian meat consumption was delegated to the OPA, which issued MRO-1, and the Meat Rationing Division of the OPA administered the provisions of this order. In general MRO-1 divided all slaughterers into two classes: Quota slaughterers and nonquota slaughterers. Quota slaughterers were those whose deliveries exceeded 2 million pounds of

meat a year or 500,000 pounds a quarter, and they were required to register with the OPA and to file reports. Their deliveries to civilians were restricted to certain percentages—an average of about 75 percent of their slaughter in the base period which was the corresponding period of 1941. All the meat produced above the civilian quotas could be delivered only to exempt agencies, which in the main were Federal procurement agencies. There were about 600 of these quota or registered slaughterers. Nonquota slaughterers were not required to register or file reports, but were ordered not to deliver to civilians in excess of 100 percent of their deliveries in the base period.

MRO-1 did not produce the results expected. The reasons for this were basically twofold:

1. Production did not come up to expectations. As a result, the Federal agencies, in their position of "residual claimants," did not get their full share after the civilian quota was filled.

2. Since nonquota slaughterers were not required to register, control over their activities was not as comprehensive as could have been desired. Also, there was considerable evasion of the restriction provisions of MRO-1 on the part of these slaughterers.

The larger slaughterers were on the whole adhering to the provisions of MRO-1, but the increase in meat output by smaller slaughterers led to a disproportionate volume of slaughter outside of regular commercial and federally inspected channels. This meant that Federal agencies were unable to obtain their full requirements of meat and meat products, and that consumers in urban areas—who draw their meat from interstate sources—were likewise unable to obtain their share. The rationing system was intended to solve this problem, but it was apparent that it would not be strong enough, especially at the beginning, to compress demand to the proper proportions, nor would it be able to direct the flow of meat so that distribution would be equitable throughout the country.

As an adjunct to the rationing system, MRO-1 was continued in force, but its administration was transferred to the Food Distribution Administration, pursuant to authority granted by Executive Order No. 9280. It was also determined to put all other slaughterers under a permit system which would limit the amount of their slaughter to a proportion of their 1941 kill. This permit system was designed to accomplish two objectives: (1) To limit the local slaughter so that the usual proportion of livestock would be forced back into commercial channels, and (2) to restore the historical relationship between the amount of cattle slaughtered locally and the amount slaughtered in commercial houses.

CONTROL OVER SLAUGHTER

Accordingly, Food Distribution Order Nos. 26 and 27 were issued on March 5, 1943, and became effective April 5. FDO 26 was an auxiliary order which called for the registration of all dealers in livestock and for the maintenance on their part of records of their transactions. FDO 27 divided all slaughterers not registered under MRO-1 into three classes, in order of size: Farmers, butchers, and local slaughterers. Farmers and butchers were limited to 100 percent of their kill in the corresponding month of 1941; local slaughterers were limited to 80 percent of their kill in the corresponding month of 1941.

Because of the great number of slaughterers involved, the field force of the FDA was not adequate to handle the job of receiving applications and issuing permits, and therefore the County War Boards were made the issuing agency, subject to policy direction by the FDA.

Because it was necessary to issue several hundred thousand permits in an exceedingly short time, many permits were issued to people not entitled to them. At the same time there was a decrease in cattle marketings and Army purchases of beef fell far below requirements. In order to force more beef to central markets, and in order to eliminate excessive temporary permits, Food Distribution Order No. 27 was amended as of May 1 to provide for revocation of temporary quotas on beef, and the issuance of temporary permits was stopped.

WAR MEAT BOARD

In May, the War Meat Board was established. This Board, under the chairmanship of the Chief of the FDA's Livestock and Meats Branch, is composed of representatives of the armed services, the OPA Meat Rationing and Price Divisions, and FDA meat purchasing officials, as well as consultants drawn from the industry.

This Board was established to provide a means not only for coordinating the activities of the principal Government agencies dealing with meat, but also to provide a means whereby some of the best informed men in the industry could work with Government representatives in solving the problems of the meat situation. The function of the Board is to serve as an advisory committee to the various Government agencies concerned with meat problems, with particular reference to adjusting their procurement and price policies, so that the supply and demand of meat can be held in balance, and so that the civilian population and the Government agencies can obtain their meat allocations with the least possible disturbance to the market. The War Meat Board holds its weekly sessions in Chicago.

ORDER ADMINISTRATION

To bring administration to the local level, a system of county war meat committees, comprised of County War Board committees, also was set up during May. These committees were to work under the supervision of an area meat supervisor, who covered a number of counties; the area meat supervisors in turn were under the jurisdiction of a State meat marketing supervisor. The county war meat committees were to issue permits to farmers and to make recommendations concerning permits for other classes of slaughterers. Likewise, the area and State meat supervisors were to issue permits or receive petitions and make recommendations upon the disposition of petitions, as well as observe compliance and the operation of the program generally.

As a further step in putting quota bases for butchers and local slaughterers on a proper level, Director's Order No. 27.3 was issued on June 26. This order called upon all local slaughterers and butchers to submit evidence substantiating the quota base that they had originally claimed and which had been originally granted to them. At the end of the fiscal year, work was beginning on this re-examination of quota bases.

SET-ASIDE ORDERS

The above-mentioned orders were aimed at controlling the flow of livestock and at limiting sales to civilians. At the same time, in order to assure Government procurement agencies of needed supplies, certain other orders were put into effect. The first of these was FDO 20, promulgated February 11, 1943. This order required federally inspected packers to set aside for sale to Government agencies 50 percent of the lard and pork fat they produced each week. Before the issuance of this order, purchases of lard by the Federal Surplus Commodities Corporation had been disappointing, but after the order was made effective and after lard rationing was begun, purchases of lard by the Federal Surplus Commodities Corporation were quite large for many weeks, running up to 75 percent or more of the federally inspected lard production. This order was outstandingly successful in making lard available to the Government agencies.

Federal agencies were having difficulty in obtaining meat supplies in the early part of 1943, so a set-aside order on meat was promulgated, calling for delivery to the Federal Government of 40 percent of the beef, 30 percent of the veal, 35 percent of the lamb and mutton, and 45 percent of the pork produced in federally inspected plants. This order was suspended within 2 weeks of its effective date of March 13, to reduce Government purchasing somewhat so as to provide supplies to meet ration points.

The Army, however, continued to experience great difficulty in obtaining sufficient beef, and this difficulty became especially marked in May and June. On June 14 a set-aside order, calling for delivery of 45 percent of each week's production of federally inspected beef meeting Army specifications, was made effective. At first, the set-aside beef could be delivered only to the armed forces, but on June 29, ships' operators authorized by the War Shipping Administration were also made eligible to buy set-aside beef. This order, coupled with the increased supplies of beef which began to come to market toward the end of June, proved very successful in assisting the armed forces to obtain beef and other meat.

Total meat purchases during the 1943 fiscal year are shown in table 5.

As the set-aside order had been suspended on March 28, there was a possibility that some packers—although their civilian sales were limited by the meat restriction order in FDO No. 27—might hold meat for speculative purposes rather than sell to the Federal Government. To make sure that this would not happen, FDO No. 48 was put into effect on April 6. This order limited inventories of fresh, frozen, and cured pork and beef to the amount held in inventory about April 1. Since an inventory limitation based on a single date was not equitable, the order was fundamentally revised, as of June 4, to provide that in the case of pork, inventories in excess of 40,000 pounds be restricted to four times the slaughterer's average weekly pork quota, and in the case of beef, to one-third the average weekly beef quota.

At the end of the fiscal year, a new slaughter-licensing system was under consideration. Through specific requirements set up for obtaining and maintaining a license, the order would make possible more direct control than heretofore over the activities of all slaughterers.

MEAT INSPECTION

In conformance with Executive Order No. 9280, meat inspection was transferred on February 1, 1943, from the Bureau of Animal Industry to the Food Distribution Administration. The scope of inspection, conducted under the two agencies during the fiscal year, remained unchanged.

Congress, by Joint Resolution (H. J. Res. 315) approved June 10, 1942, authorized the Secretary of Agriculture to provide meat inspection during the war emergency at meat-packing establishments engaged in intrastate commerce only, in order to facilitate purchase of meat and meat products by Federal agencies. Largely due to this extension of the law, the number of inspected establishments during the year increased from 659 as of June 30, 1942, to 842 on June 30, 1943. These establishments are located in 336 cities and towns.

Tables 7 to 14 summarize meat-inspection activities during the fiscal year.

TABLE 7.—*Ante mortem and post mortem inspections of animals, fiscal year 1943*

| Kind of animal | Ante mortem inspection | | | | Post mortem inspection | | |
|---------------------|------------------------|------------------------|------------------------|----------------------|------------------------|------------------------|----------------------|
| | Passed | Suspected ¹ | Condemned ² | Total | Passed | Condemned ² | Total |
| Cattle | Number 11,475,907 | Number 97,123 | Number 4,844 | Number 11,577,874 | Number 11,511,624 | Number 60,661 | Number 11,572,285 |
| Calves | 5,081,344 | 8,041 | 3,939 | 5,093,324 | 5,069,824 | 19,507 | 5,089,331 |
| Sheep and lambs | 21,792,185 | 12,078 | 12,996 | 21,817,259 | 21,695,545 | 108,471 | 21,804,016 |
| Goats | 30,747 | 144 | 69 | 30,960 | 30,608 | 283 | 30,891 |
| Swine | 56,736,514 | 131,466 | 21,579 | 56,889,559 | 56,736,007 | 131,073 | 56,867,080 |
| Horses ³ | 39,807 | 129 | 84 | 40,020 | 39,152 | 783 | 39,935 |
| Total | 95,156,504 | 248,981 | 43,511 | 95,448,996 | 95,082,760 | 320,778 | 95,403,538 |

¹ "Suspected" is used to designate animals suspected of being affected with disease or condition that may cause condemnation in whole or part on special post mortem inspection.

² For causes and additional condemnations see tables 8 to 10, inclusive.

³ Horses are slaughtered and their meat handled and prepared in establishments separate and apart from those in which cattle, calves, sheep, goats, and swine are slaughtered and their meat handled and prepared.

⁴ Includes 1,895 previously suspected animals which died in pens.

TABLE 8.—*Number of animals condemned for various diseases and conditions on ante mortem inspection, fiscal year 1943*

| Cause of condemnation | Cattle | Calves | Sheep and lambs | Goats | Swine | Horses |
|--------------------------------------|--------|--------|-----------------|-------|--------|--------|
| Abscess | | | | | 13 | |
| Actinomycosis | 1 | | | | | |
| Arthritis and bone diseases | | 1 | | | 5 | |
| Emaciation | | 3 | 2 | | 32 | |
| Enteritis | | | | | 1 | |
| Hog cholera | | 18 | | | 861 | |
| Immaturity | | | 5 | | 1 | |
| Injuries | | | | | | |
| Mastitis | 2 | | | | | |
| Metritis | 1 | | | | | |
| Moribund ¹ | 4,623 | 3,907 | 12,983 | 69 | 20,219 | 84 |
| Pericarditis | 1 | | | | | |
| Peritonitis | 1 | | | | | |
| Pneumonia | 9 | 6 | 2 | | 3 | |
| Pregnancy and recent parturition | 2 | | | | | |
| Pseudoleukemia | 1 | | | | | |
| Pyrexia | 7 | 4 | 2 | | 403 | |
| Septicemia and pyemia | 4 | | 2 | | 22 | |
| Tetanus | 1 | | | | 1 | |
| Toxemia | 2 | | | | 18 | |
| Tumors, carcinomata, sarcomata, etc. | 189 | | | | | |
| Total | 4,844 | 3,939 | 12,996 | 69 | 21,579 | 84 |

¹ Includes animals found dead in the ante mortem pens at time of inspection.

TABLE 9.—Number of carcasses condemned for various diseases and conditions on post mortem inspection, fiscal year 1943

| Cause of condemnation | Cattle | Calves | Sheep and lambs | Goats | Swine | Horses |
|--------------------------------------|--------|--------|-----------------|-------|---------|--------|
| Actinomycosis and actinobacillosis | 652 | 71 | | | 14 | |
| Anaplasmosis | 234 | 5 | | | | |
| Anthrax | | | | | 100 | |
| Arthritis and bone diseases | 317 | 571 | 1,304 | | 13,628 | 2 |
| Asphyxia | 3 | 7 | 17 | 1 | 789 | |
| Blackleg | 4 | 2 | | | | |
| Caseous lymphadenitis | | | 15,764 | 1 | | |
| Cellulitis | | | | | 11 | |
| Coccidioidal granuloma | 1 | | | | | |
| Contamination | 165 | 3 | 104 | | 2,791 | 2 |
| Cysticercosis | 194 | 12 | 754 | | 32 | |
| Degenerative diseases | 1 | 1 | | | 398 | |
| Dropsical diseases | 140 | 5 | 26 | | 66 | 3 |
| Emaciation | 7,049 | 3,006 | 43,882 | 151 | 220 | 129 |
| Hog cholera | | | | | 16,497 | |
| Icterus | 249 | 431 | 3,022 | 4 | 10,373 | 1 |
| Immaturity | | 6,599 | 13 | 2 | | 2 |
| Influenza | | | | | 2 | |
| Injuries | 2,729 | 389 | 4,182 | 48 | 2,220 | 18 |
| Johne's disease | 1 | | | | | |
| Mastitis, mammitis, etc. | 2,936 | 105 | 157 | | 123 | 6 |
| Melanosis | 45 | 75 | 165 | | 237 | 101 |
| Metritis | 4,029 | | 358 | | 1,212 | 7 |
| Necrobacillosis | 15 | 3 | 10 | | 4 | |
| Nephritis | 3,942 | 240 | 644 | | 1,783 | 16 |
| Omphalophlebitis | | 206 | | | 1 | |
| Parasitic diseases | 190 | | 66 | | 677 | |
| Pericarditis | 4,327 | 80 | 211 | | 586 | |
| Peritonitis and enteritis | 3,121 | 1,311 | 928 | 6 | 5,981 | 34 |
| Pneumonia and pleurisy | 10,987 | 4,526 | 28,779 | 42 | 23,606 | 354 |
| Pregnancy and recent parturition | 18 | | 3 | | 3 | 2 |
| Pseudoleukemia and leukemia | 1,305 | 70 | 36 | | 281 | 2 |
| Septicemia and pyemia | 10,610 | 1,680 | 6,209 | 24 | 29,107 | 71 |
| Sexual odor | 4 | | | 2 | 4,668 | |
| Skin diseases | 1 | | 2 | | 16 | |
| Swine erysipelas | | | | | 1,605 | |
| Toxemia | 31 | 8 | 17 | | 54 | |
| Tuberculosis | 1,805 | 26 | 23 | | 13,051 | |
| Tumors, carcinomata, sarcomata, etc. | 5,139 | 58 | 225 | 1 | 628 | 28 |
| Uremia | 404 | 17 | 1,569 | 1 | 307 | 5 |
| Xanthosis | 13 | | 1 | | 2 | |
| Total | 60,661 | 19,507 | 108,471 | 283 | 131,073 | 783 |

TABLE 10.—Number of parts of carcasses¹ condemned for various diseases and conditions on post mortem inspection, fiscal year 1943

| Cause of condemnation | Parts of carcasses of— | | | | |
|------------------------------------|------------------------|--------|-----------------|---------|--------|
| | Cattle | Calves | Sheep and lambs | Swine | Horses |
| Actinomycosis and actinobacillosis | 157,829 | 4,465 | 13 | 2 | |
| Arthritis and bone diseases | 38 | 17 | 10 | 300 | 14 |
| Cellulitis | 8 | 3 | | 985 | |
| Contamination | 157 | 184 | 1 | 1,005 | |
| Degenerative diseases | 33 | | | 22 | |
| Dropsical diseases | 5 | 4 | | | |
| Injuries | 1,939 | 136 | 150 | 62,007 | 100 |
| Melanosis | 23 | 27 | | 4 | 84 |
| Necrobacillosis | 50 | | | | |
| Parasitic diseases | 13 | | | | |
| Tuberculosis | 2,378 | 33 | | 259,703 | |
| Tumors and abscesses | 22,033 | 3,957 | 107 | 598,709 | 1,044 |
| Xanthosis | 27 | | | | |
| Total | 184,533 | 8,826 | 281 | 922,737 | 1,242 |

¹ In addition to the above parts, 1,242,498 cattle livers and 41,876 calf livers were condemned on post mortem inspection.

TABLE 11.—*Meat and meat food products prepared and processed under supervision, fiscal year 1943*¹

| Product | Quantity | Product | Quantity |
|---|---------------|--|-----------------------------|
| Placed in cure: | | Canned meat and meat food products—continued | |
| Beef | 124,590,795 | Soup | Pounds 217,521,385 |
| Pork | 3,354,027,875 | All other | 599,700,312 |
| Smoked and/or dried: | | Bacon, sliced | 393,219,287 |
| Beef | 48,222,091 | Lard: | |
| Pork | 2,019,246,816 | Rendered | 1,607,659,145 |
| Sausage: | | Refined | 1,376,701,158 |
| Fresh, finished | 309,945,869 | Rendered pork fat: | |
| Smoked and/or cooked | 928,154,196 | Rendered | 193,801,803 |
| To be dried or semidried | 131,048,932 | Refined | 114,215,182 |
| Loaf, headcheese, chili con carne, jellied products, etc. | 225,502,714 | Oleo stock | 146,176,965 |
| Cooked meat: | | Edible tallow | 110,735,574 |
| Beef | 17,971,968 | Compound containing animal fat | 352,303,865 |
| Pork | 284,498,807 | Oleomargarine containing animal fat | 60,057,659 |
| Canned meat and meat food products: | | Miscellaneous | 28,576,409 |
| Beef | 150,275,165 | Horse meat, chopped | 6,602,831 |
| Pork | 1,177,275,699 | | |
| Sausage | 314,683,723 | Total | ² 14,292,716,225 |

¹ The following quantities of meat and meat food products were condemned on reinspection and destroyed for food purposes on account of having become sour, tainted, rancid, unclean, or otherwise unfit for human food: Beef, 3,200,189 pounds; pork, 8,153,021 pounds; mutton, 127,783 pounds; veal, 48,395 pounds; goat meat, 102 pounds; horse meat, 91,965 pounds; total, 11,621,455 pounds.

² This figure represents inspection pounds. Some of the products may have been inspected and recorded more than once due to having been subjected to more than 1 processing treatment, such as curing first and then canning.

TABLE 12.—*Quantities of meat and meat food products inspected for condition and conformance to specifications for other Government agencies, fiscal year 1943*

| Branch of Government | Passed | Rejected | Branch of Government | Passed | Rejected |
|--|---------------|---------------|--|---------------|---------------|
| | <i>Pounds</i> | <i>Pounds</i> | | <i>Pounds</i> | <i>Pounds</i> |
| Navy Department | 661,595,122 | 10,035,479 | Fish and Wildlife Service | 2,729 | 1,200 |
| Marine Corps | 73,597,885 | 87,329 | Tennessee Valley Authority | 441,431 | 1,872 |
| Federal Surplus Commodities Corporation | 13,778,853 | — | War Department: Army Engineers | 355,183 | 1,852 |
| Coast Guard | 5,982,547 | 134,481 | Maritime Commission | 199,663 | 8,237 |
| War Shipping Administration | 3,581,673 | 32,456 | Department of Commerce: Inland Waterways Corporation | 62,975 | 92 |
| Veterans' Administration: Supply Service | 1,567,791 | 22,342 | Department of Agriculture: Forest Service | 42,392 | 160 |
| Department of Justice: Bureau of Prisons | 1,200,220 | 34,043 | Federal Security Agency: Public Health Service | 36,946 | 1,531 |
| Department of Interior: Alaska Railroad | 485,023 | 3,024 | | | |
| Office of Indian Affairs | 368,691 | 3,048 | Total | 763,306,009 | 10,367,146 |
| Alaska Road Commission | 6,885 | — | | | |

TABLE 13.—*Shipments of farm-slaughtered meat and meat food products, fiscal year 1943*¹

| Product | Carcasses | Quantity | Product | Carcasses | Quantity |
|-----------------------|---------------|---------------|--|---------------|---------------|
| | <i>Number</i> | <i>Pounds</i> | | <i>Number</i> | <i>Pounds</i> |
| Cattle (336 quarters) | 84 | 27,638 | Cured and smoked meats | — | 464,937 |
| Calves | 6,272 | 374,099 | Sausage | — | 161,426 |
| Sheep and lambs | 1,388 | 48,023 | Lard | — | 7,573 |
| Goats and kids | 71 | 2,150 | Miscellaneous (scrapple, headcheese, livers, souse, meat loaf, etc.) | — | 5,153 |
| Swine | 146 | 21,515 | | | |
| Fresh meats: | | | Total | 7,961 | 1,346,511 |
| Beef | | 50,333 | | | |
| Veal | | 6,761 | | | |
| Mutton and lamb | | 2,751 | | | |
| Pork | | 174,152 | | | |

¹ Under certain provisions of the meat inspection law, shipments of meat of animals slaughtered by farmers on farms, and meats shipped by retail butchers and retail dealers supplying their customers outside of the State, are exempted from inspection although such shipments are required to be reported.

TABLE 14.—*Shipments by retail butchers and retail dealers under certificates of exemption, fiscal year 1943¹*

| Product | Carcasses | Quantity | Product | Carcasses | Quality |
|-------------------------------|---------------|---------------|--|---------------|---------------|
| | <i>Number</i> | <i>Pounds</i> | | <i>Number</i> | <i>Pounds</i> |
| Cattle (2,160 quarters) | 540 | 276,763 | Cured meats | | 2,317,131 |
| Calves | 539 | 112,577 | Sausage | | 181,839 |
| Sheep and lambs | 500 | 21,217 | Lard | | 32,521 |
| Goats and kids | 20 | 603 | Miscellaneous (headcheese, suet, scrapple, compound, etc.) | | . |
| Swine | 106 | 16,696 | Total | 1,705 | 113,436 |
| Fresh meats: | | | | | |
| Beef | | 10,859,720 | | | |
| Veal | | 727,196 | | | |
| Mutton and lamb | | 737,134 | | | |
| Pork | | 965,030 | | | |
| | | | | | 16,361,863 |

¹ Under certain provisions of the meat inspection law, shipments of meat of animals slaughtered by farmers on farms, and meats shipped by retail butchers and retail dealers supplying their customers outside of the State, are exempted from inspection although such shipments are required to be reported.

Examinations of 29,609 samples of meat, meat food products, and ingredients and substances used in their preparation were made in 7 meat inspection laboratories during the year. Of this number, 4,505 samples resulted in adverse findings.

Approval of 17,064 labels was given for use at official establishments and of 134 for use on foreign meat and meat food products intended for importation. Because they did not comply with labeling requirements, 2,108 labels and sketches of proposed labels were returned without approval.

During the year 694 sets of drawings and sketches for new and remodeled buildings and for installation of major equipment were received.

At the close of the fiscal year there were 428 federally inspected establishments in which slaughtering operations were conducted with or without the processing of meat, and 414 inspected establishments in which meats were only processed. The dehydration of meat for lend-lease and the military agencies got under way during the year, with 9 inspected establishments producing substantial quantities.

(Before the war it was customary to publish data regarding meat and meat food products certified for export, and on inspection of meat and meat food products offered for entry into the United States. Those data are still being compiled, but publication is necessarily withheld.)

MEAT GRADING

Meat grading was at a record high level during the year because of the increased purchases of meat and meat food products by the FDA and the demand for grading service by the War Shipping Administration at ports of embarkation. Further acceleration came with OPA regulations requiring the grading and stamping of meat by Federal graders. By the end of the year, the OPA had made grading of beef, lamb, and mutton mandatory and had required packers to stamp all these types of meat with the proper Federal grade. This regulation covered noninspected as well as inspected meat.

TABLE 15.—*Meats, meat food products, and byproducts regularly graded, certified, and accepted*¹

[Fiscal year ended June 30, 1943]

| Item | 1940 | 1941 | 1942 | 1943 ² |
|-----------------------------|------------------------------|------------------------------|------------------------------|--------------------------------|
| Fresh and frozen beef | <i>Pounds</i> 544,810,856 | <i>Pounds</i> 631,427,662 | <i>Pounds</i> 919,992,665 | <i>Pounds</i> 3,800,344,822 |
| Veal and calf | 6,082,344 | 8,468,085 | 9,906,034 | ³ 391,475,445 |
| Lamb | | ³ 25,592,047 | 33,201,920 | ³ 292,626,452 |
| Yearling mutton and mutton | 23,460,669 | 3,016,232 | 2,736,128 | ³ 21,459,480 |
| Pork | 6,118,856 | 9,872,573 | 7,252,780 | ⁴ 4,590,034 |
| Cured beef | 1,911,234 | 1,663,211 | 2,001,544 | ⁴ 1,064,765 |
| Cured pork | 24,980,962 | 11,745,190 | 10,505,751 | ⁴ 6,958,176 |
| Sausage | 29,681,178 | 6,563,897 | 7,544,879 | ⁴ 6,543,697 |
| Other meats and lard | 3,347,422 | 5,778,191 | 5,781,435 | |
| Lard | | | | ⁴ 959,682 |
| Lard substitutes | | | | ⁴ 237,709 |
| Miscellaneous meats | | | | ⁴ 1,962,343 |
| Total accepted ³ | ¹ 640,393,521 | ¹ 704,127,088 | ¹ 998,923,136 | ¹ 4,528,222,605 |

¹ Excludes Federal Surplus Commodities Corporation gradings.² May and June estimated.³ Comparatively few requests for grading veal, lamb, and mutton were received when the service was conducted on a voluntary basis.⁴ Decreased gradings were due largely to respective FSCC and other purchase increases.⁵ Total products rejected during current fiscal year, 1,034,051 pounds.

Clarification of many erroneous interpretations of Federal standards for grades of dressed meat was necessary. Therefore, immediately following the OPA mandatory grading order, the placing of graders in widely separated rural and otherwise remote meat-producing and meat-merchandising communities was necessary in order to make the grading service available to slaughterers and local butchers.

TABLE 16.—*Meats, meat products, and byproducts certified and accepted for Federal Surplus Commodities Corporation, 1942 and 1943¹ fiscal years*

| Item | 1942 fiscal year (actual) | 1943 fiscal year (last 2 months estimated) |
|---------------------------|------------------------------|--|
| Fresh pork products | <i>Pounds</i> 47,613,435 | <i>Pounds</i> 182,861,282 |
| Cured pork cuts | 409,791,326 | 497,483,906 |
| Canned meats ² | 567,894,354 | 1,004,903,173 |
| Lard and lard substitutes | 595,174,001 | 529,917,664 |
| Oleomargarine | 9,811,578 | 80,900,000 |
| Calf's foot jelly | None | 25,369 |
| Oleo oil | 3,156,176 | 7,024,979 |
| Fresh beef | 2,898,354 | 12,740,587 |
| Cured beef | 171,000 | 81,300 |
| Beef suet | 103,920 | 1,094,858 |
| Veal | 80,028 | 7,712,887 |
| Lamb and mutton | 27,607 | 92,269,044 |
| Edible tallow | 4,975,058 | 24,225,792 |
| Fatty acids | 12,000 | None |
| Total | <u>1,641,708,837</u> | <u>2,441,240,844</u> |
| Increase | | <u>799,532,007</u> |
| Hog casings—(bundles) | <u>3,151,414</u> | <u>3,454,660</u> |
| Beef bungs—(pieces) | <u>497,000</u> | <u>5,000</u> |

¹ The figures shown in this table are not identical with those shown in table 5. The figures in table 5 include products purchased during the fiscal year, but not necessarily certified and inspected during the fiscal year.

² Includes dehydrated beef and pork.

In addition to the 55 regular grading stations, there were in operation and available for service about 65 substations, as well as itinerant graders at many major points. The technical staff was increased from 224 to 523 official graders.

LIVESTOCK AND MEAT STANDARDIZATION

Standardization activities conducted during the year, with respect to livestock and meat, were extensive in the fields of correlation and evaluation. Studies involving physical composition and characteristics as related to grade were carried on almost continuously in an effort to determine and fix the line of demarcation more clearly between grades. Work in this field was made urgent by regulations of the OPA, which made mandatory the grading of all carcass and wholesale cuts of beef, veal, lamb, and mutton.

To improve the grade standards for carcass pork further, a detailed study was made of accumulated data to relate more clearly type, measurements, and wholesale cuts to grade. From such studies it has been determined that the thickness of fat is of practical importance and that there exists a definite relationship between thickness of fat, dressing percentage, yields of wholesale cuts, and grade.

Studies also were initiated to distinguish and define more specifically the carcass characteristics which indicate the line of class demarcation between spring lamb and lamb, between lamb and yearling, and between yearling and mutton.

Experimental activities involving live animals and carcass grading were conducted in cooperation with the Department's Research Center at Beltsville, Md., and with several experiment stations.

DISTRIBUTION OF BEEF GRADED ACCORDING TO GRADES

Research has shown that data on grade distribution of the various kinds of meat become highly significant when the entire slaughter is graded. But beef is the only kind of meat for which sufficient data have been accumulated to give a reliable indication as to grade distributions. The volume of beef in each grade, as well as the percentage distribution by grades, is shown in table 17. In conformity with the maximum price regulations of the OPA, the grade Prime is combined with the grade Choice.

TABLE 17.—*Beef officially graded, by grades, calendar years 1939-42*¹

| Grade | 1939 | 1940 | 1941 | 1942 | 1939 | 1940 | 1941 | 1942 |
|---------------|--------------|--------------|--------------|--------------|---------|---------|---------|---------|
| | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | Percent | Percent | Percent | Percent |
| Prime | 10,523 | 11,613 | 13,419 | 439,831 | 2.0 | 2.0 | 1.7 | 29.7 |
| Choice | 232,504 | 229,867 | 308,234 | 560,304 | 45.4 | 39.7 | 39.0 | |
| Good | 176,092 | 233,613 | 343,189 | 284,083 | 34.4 | 40.4 | 43.5 | 37.9 |
| Commercial | 54,636 | 69,358 | 85,894 | 172,991 | 10.7 | 12.0 | 10.9 | 19.2 |
| Utility | 28,459 | 24,654 | 26,254 | | 5.6 | 4.3 | 3.3 | 11.7 |
| Cutter | 5,929 | 6,971 | 9,584 | 14,118 | 1.2 | 1.2 | 1.2 | 1.0 |
| Canner | 1,266 | 2,224 | 3,201 | 6,857 | .2 | .4 | .4 | .5 |
| Not specified | 2,607 | 137 | 120 | 284 | .5 | 0 | 0 | |
| Total | 512,017 | 578,436 | 789,894 | 1,478,468 | | | | |

¹ The 1942 tonnage for beef graded reflects an increase of 688,574,000 pounds over the 1941 period or approximately 187 percent, exclusive of grading for Federal Surplus Commodity Corporation.

The percentage ratio of grades for 1942 is not comparable with preceding periods because of mandatory Office of Price Administration grading regulation for Choice grade effective Sept. 18, 1942, and for Choice, Good, Commercial, and Utility grades effective Dec. 16, 1942.

The trend for beef graded prior to mandatory OPA grading regulation for the first 8 months, and while grading was more or less on a voluntary basis, reflected an increase of 125,009,800 pounds, or approximately 26 percent. During this period the total grading of all meat, meat products, and byproducts, other than beef reflected an increase of 857,551 pounds.

The total of all meat, meat products, and byproducts graded and accepted for the calendar year 1942 was 1,662,152,937 pounds, compared with 868,116,818 pounds (exclusive of FSAC products) for a similar period in 1941, or a net increase of 794,036,119 pounds. Of this increase, 5,462,768 pounds represented commodities other than beef, despite the fact that grading for such commodities (with the exception of Choice veal, for which grading was mandatory on Sept. 18, 1942), was largely on a voluntary basis.

MARKET NEWS ON LIVESTOCK

During the year a total of 32 field offices were operated, providing a broad and effective national coverage of livestock market supplies, prices, and conditions. The offices were located at Baltimore, Md.; Boston, Mass.; Buffalo, N. Y.; New York, N. Y.; Louisville, Ky.; Montgomery, Ala.; Nashville, Tenn.; Thomasville, Ga.; Chicago, Ill.; Cincinnati, Ohio; Detroit, Mich.; Indianapolis, Ind.; National Stockyards (East St. Louis), Ill.; Peoria, Ill.; Des Moines, Iowa; Kansas City, Mo.; Omaha, Nebr.; Sioux City, Iowa; South St. Joseph, Mo.; South St. Paul, Minn.; Wichita, Kans.; Ft. Worth, Tex.; Houston, Tex.; Oklahoma City, Okla.; San Antonio, Tex.; Casper, Wyo.; Denver, Colo.; Ogden, Utah; Los Angeles, Calif.; North Portland, Oreg.; and San Francisco, Calif.

The offices at Los Angeles, Montgomery, Nashville, Ogden, San Antonio, San Francisco, and South St. Paul were operated in cooperation with the State departments of agriculture. The services in Alabama and Florida, handled by the Thomasville office were conducted, respectively, in cooperation with the Alabama and Florida Departments of Agriculture. The office at Baltimore was closed at the end of the fiscal year, but plans were moving forward to reopen it with funds provided by the State Department of Markets, Extension Service, and State Board of Agriculture of Maryland.

In addition to the regular activities of marketing, many special activities were carried on. Periodical and special reports were furnished on hog marketings, the liquidation of dairy cows, and the country slaughter of dairy-bred calves. Numerous special statistical compilations were prepared for use of Government and private agencies. To reduce livestock losses, the market news service, in co-operation with the National Livestock Loss Prevention Board, gave extensive publicity to slogans and phrases designed to educate livestock handlers in the proper loading and handling of animals. Auction sales held at Denver, Billings, Portland (Oreg.), and San Francisco were reported.

WOOL STANDARDIZATION AND RESEARCH

Wool standardization and research were carried on in Washington and in the field as four major lines of work. These were as follows:

1. Wool standardization studies.
2. Wool shrinkage studies.
3. Appraisal of wools under FDO No. 50.
4. Economic studies on wool baling, wool bagging supplies, and wool consumption by mills.

Regulations relating to the determination of the grade of wool in accordance with the official standards were promulgated during the fiscal year. These regulations were embodied in Amendment No. 2 to S. R. A. No. 135, Amendment of Regulations of the Secretary of Agriculture Relating to the Official Standards of the United States for Grades of Wool, dated November 1942.

Tests for the baling of wool were conducted in cooperation with the Farm Credit Administration by use of cotton presses. These tests resulted in the following conclusions:

1. Ordinary cotton gin presses appeared to be adaptable for baling wool.

2. Bales of about 500 to 600 pounds, with a density of 19 pounds per cubic foot, seemed to be satisfactory.

3. Burlap appeared to be the most suitable bale covering. It was found, however, that 50 percent less of the burlap was required for baling than for bagging a similar amount of wool.

4. All wool before being baled should be tagged and graded.

Further tests are being conducted to determine the feasibility of baling domestic wools in producing areas, in relation to the following: (1) Extent that grading, skirting, and tagging will be required before packing; (2) saving in shipping space; (3) costs of baling in relation to sacking; (4) effect on appearance of wool; (5) economies in haulage.

In order to furnish growers with current information on bagging supplies and mill consumption of wool, surveys were commenced during the fiscal year, and are expected to continue during the current year.

Important progress was made in developing new chemical combinations for use in the branding of fleeces. Samples of a number of branding formulas have been submitted to outside agencies, such as livestock and wool departments of State colleges, for experimental testing under actual field and ranch conditions. Further experiments and testing will need to be done for an indefinite period before it can be determined that the branding products are the best obtainable.

Methods of determining wool shrinkage have been the subject of research by the United States Department of Agriculture for several years. This work continued in 1943. The purpose of the entire investigation has been to find a reliable, objective way of determining the shrinkage of a wool clip from a representative sample. Co-operating agencies, in addition to those within the United States Department of Agriculture, have been colleges, universities, State experiment stations, and various woolen mills. As a result of the experiments, a core sampling device, consisting primarily of a $1\frac{1}{4}$ -inch diameter coring tube, was used to arrive at reliable shrinkage estimates and appraisals of wool.

WOOL PURCHASE AND APPRAISAL PROGRAM

When the present plan of purchasing the entire domestic clip of 1943 was finally decided upon, the Food Distribution Administration became the supervisory agency for all appraisals. It then proceeded to select outstanding wool men to be in charge of the actual administration of the appraisal work in the field. A chief appraisal office was set up in Boston, and six regional appraisal offices were established throughout the country. These offices have continued to handle the administrative details of appraising the 1943 wool clip.

On June 30, 1943, approximately 60,000,000 pounds of wool had been appraised under the Department's purchase program. Since the appraisal service is rendered on a basis of a charge of one-eighth cent per pound, this activity is expected to be entirely self-supporting.

In operating the appraisal program from April 25 to June 30, 1943, it became plain, because of growers' objections to some of the appraisals made, that the FDA would be called upon to apply the results of its earlier research in wool shrinkage to certain difficult appraisal problems that were being encountered. So, at the request of growers' representatives, the FDA undertook an extensive program

of sampling by the core method a wide variety of lots of wool, both in the West and at Boston and Philadelphia. Shrinkages shown by these core samples are being checked by scouring 10-bag samples from individual clips, in order to provide a reliable basis for future appraisals.

PACKERS AND STOCKYARDS ACT

The volume of business passing through markets "posted" under the Packers and Stockyards Act last year was unusually large. The value of the livestock marketed was almost the greatest in the history of the yards. Yet the per head charges collected by stockyard companies and market agencies for their services were the same at nearly all markets and at some were lower than in the previous year. Thus rate regulation under the act again proved its effectiveness in preventing undue increases from burdening market machinery.

In the Stabilization Act of October 1942, Congress provided that if utilities sought to increase rates above those in effect on September 15, 1942, they must give 30 days' notice to the President and consent to intervention by the Government. The job of administering this act was given to the Office of Price Administration. That agency, in cooperation with the FDA, promulgated rules of procedure relating to proposed rate increases under the Packers and Stockyards Act.

In the course of the year, more than 1,200 tariffs or supplements to tariffs were filed. Many of these, of course, were of simple character. Others, however, were from larger markets and groups of agencies seeking substantial increases in basic charges. Through the process of informal handling, many of the tariffs were withdrawn and this action, it is estimated, saved farmers at least \$90,000 during the year. In other instances, however, it was necessary to suspend the rates and proceed formally. Through stipulations and by rate orders, reductions were made in stockyard and commission rates amounting to approximately \$300,000 a year.

Appraisal work was continued at markets where valuations have not been made, basic data being collected at three important stockyards.

Completely revised regulations under the act were issued during the year, the first general revision since the act was passed in 1921. One of the important changes requires somewhat larger bonds of livestock commission men and dealers to protect their obligations. As a result of this requirement, as well as increased volume and value of livestock, total outstanding bonds increased from \$16,000,000 to over \$22,000,000 during the year.

Tests of over 2,200 scales made during the year showed that 266 were inaccurate. They were corrected or removed from service, depending on the seriousness of defects found. Ten new or shop-rebuilt scales were installed to replace old or worn out scales.

About 500 audits were made of the books of commission men, dealers, and others. Auditing work continued at the largest market in the country and the prospect is that it will be completed during the next year. A program of trade-practice audits was started at another large market and was well under way at the close of the year.

More and more recourse was had to stipulations under the provisions of Section 202.5 of the rules of practice in connection with those types

of trade practices which are appropriate for disposition by stipulation. During the year 22 such stipulations were entered into with registrants.

Supervisors at field stations received and disposed of more than 400 informal complaints during the year without reference to the Washington office. These cases covered a variety of matters such as lost or crippled animals, errors in remittances, prices, and weights. All told, shippers recovered more than \$6,000 without litigation of any kind. In addition, 37 formal reparation cases were settled during the year in which over \$4,100 was awarded in 8 cases. Sixteen cases were disposed of by Federal courts during the year, these involving chiefly failure to register or furnish bonds. Fines and costs were imposed in the amount of more than \$700.

Fifty-six formal cases were pending at the beginning of the year, 48 new ones were instituted, and 10 were reopened. Sixty-four were finally disposed of, leaving 50 pending at the close of the year. Eighteen of the new cases involved trade practices, 14 reparations, and the balance such matters as rates, licenses, and insolvency. Twenty-seven hearings and 14 oral arguments were held during the year.

Table 18 shows the number of persons and agencies subject to the act at the close of the 1943 fiscal year, as compared with the previous fiscal year.

TABLE 18.—*Agencies and persons registered under the Packers and Stockyards Act, 1942 and 1943 fiscal years*

| Fiscal year ended | Stock-yards posted | Market agencies registered | Dealers registered | Packers under supervision | Poultry markets designated | Poultry licensees |
|--------------------|--------------------|----------------------------|--------------------|---------------------------|----------------------------|-------------------|
| | Number | Number | Number | Number | Number | Number |
| June 30, 1942..... | 217 | 1,923 | 2,499 | 1,316 | 16 | 1,743 |
| June 30, 1943..... | 205 | 1,863 | 2,548 | 1,290 | 16 | 1,619 |

THE INSECTICIDE ACT

During the 1943 fiscal year the shortage of raw materials resulting from war conditions has very adversely affected the insecticide and fungicide industry. Many materials formerly used were replaced by new and untried ones, and increased vigilance was necessary to protect the consumer from misbranded and adulterated products. This adulteration resulted not only in cheating the purchaser of the goods for which he paid but also in lack of control of the insects for which the products were intended, with loss of yield in the case of plant insecticides and health hazards in the case of products intended for use against household insects.

In its administration of the Insecticide Act, the FDA tested and reported 2,152 official samples, of which 426 failed to comply with the requirements of the act. Violations in the case of 336, or about 16 percent of those reported, were of sufficiently serious nature to justify action as provided by the law; in the case of 90 products the violations were of less serious nature and were adjusted through correspondence with the manufacturers. Tests of 128 other products were not suffi-

ciently conclusive to warrant action and new samples of the products are being obtained for further tests.

Twenty-one seizures, involving 17 different products and 16 manufacturers, were made, and 48 criminal action cases, involving 37 different products and 27 manufacturers, were submitted to the Solicitor's Office for preparation and submission to the Department of Justice.

Criminal action cases, totaling 52, involved 40 different products and 26 manufacturers. These cases were adjudicated in the Federal courts, and all of them terminated in favor of the Government. Nine other cases submitted to the courts were dismissed for the following reasons: Not filed in time by the United States District Attorney, 2 cases; company out of business, 3 cases; defendant deceased, 1 case; Government witness in the Army and not available to give testimony, 2 cases; and United States marshal unable to locate defendants for service and statute of limitations expired, 1 case.

METHODS OF ANALYSIS AND TESTS

New insecticides and fungicides are constantly being introduced on the market, and the formulas of many others have been changed, due mainly to the manufacturers' inability to obtain certain raw materials which were available before the war. On account of this, much work is necessary in the development of methods for the analyses of these new products. Extensive field tests to determine the effectiveness of these products must also be carried out by the entomologists and plant pathologists. The types of disinfectants on the market are constantly changing and bacteriological investigations must be made for the purpose of developing methods for their testing and for improving and standardizing the methods of testing disinfectants now in general use.

Chemical Methods.—The present method for the determination of Pyrethrin I in mixtures of pyrethrum and many of the newer insecticidal ingredients is not at all satisfactory and it has been necessary to devote much time in an attempt to develop methods that are applicable to such mixtures. A rapid method for the determination of fluorine in commercial fluorides has been devised, which will shorten the time for analyzing these products. New methods for the determination of mercury in mercurial soaps and ointments, and a qualitative test for Thanite have also been developed.

Entomological Tests.—In connection with the regulatory work, investigations are being made to determine the effectiveness of substitutes for pyrethrum and rotenone now being used. A laboratory method for testing roach sprays, which gives promise of shortening the time required to test these products, has been devised and is still undergoing study.

Fungicidal Tests.—Tests have shown that the newer types of copper fungicides may be satisfactory as a substitute for Bordeaux for specific diseases in some localities but not so in others. The greater part of the regulatory work in fungicides involves treatment of the growing crops, but it also includes soil treatments for the control of fungous infestations of the soil, treatments of seed grains and tubers, and wood preservatives sold for the control of wood-rot fungi.

Bacteriological Tests.—During the year much work has been done in the study of methods of testing fungicidal substances offered for

use in eliminating and preventing the spread of organisms causing mycotic infections (athlete's foot). Numerous such products have recently been placed on the market, some of which have merit and others little or none. Studies on the resistance of different strains of *Escherichia coli* and *Pseudomonas aeruginosa* have been carried out with the view of establishing standards of resistance to these organisms in order that they may be utilized in phenol coefficient determinations. There is now on the market a large number of new types of disinfecting compounds with a typical germicidal action. It is essential that laboratory tests be established as a means of obtaining a broader knowledge of the practical value of these disinfectants than is possible by phenol coefficient determinations alone.

EGGS AND POULTRY

Outstanding in the egg and poultry field during the 1943 fiscal year was the continued record output of the egg-drying industry. Substantially all of the processing capacity of the industry was being utilized during the year for drying eggs for direct war use, but a determined effort was made to expand egg-drying capacity further, to bring about improvements in the techniques of egg drying so as to insure higher uniform quality, and to complete a program for shipping dried eggs in consumer-size packages.

By July 1, 1943, the number of egg-drying plants in operation had increased to 126 from 71 a year earlier, and the total capacity had increased from 252 million pounds of dried eggs per year to 425 million pounds. Resident samplers, resident inspectors, laboratory analyses and reports, extensive work directly with plant operators, and additional work on specifications and standards for fresh, frozen, and dried eggs all contributed to improved quality.

While the technical phases involved in obtaining more and better dried eggs were being tackled on several fronts, some serious distribution problems were encountered by the poultry industry as a whole and had not been completely solved at the end of the year. Most of the problems in the field of distribution involved the permanent and uniform price ceilings on eggs and poultry products.

Two food orders—FDO No. 40 and FDO No. 41—were designed to prevent speculative storing and to place limitations on the use of eggs, by providing that: (1) All shell eggs in storage on May 20 were to be set aside for use by governmental agencies or for delivery to egg-drying plants; (2) eggs stored after March 25 were required to be removed from storage after June 15; (3) no storage of shell eggs was to be permitted after May 20, except that working inventories were permitted to allow for current operations; (4) the FDA was obligated to buy all eggs required to be removed from storage; (5) the production of frozen eggs, dried yolk, and dried albumen was to be limited to the quantity produced during the previous year; and (6) all spray-dried whole eggs were set aside for governmental use. These orders, with their amendments, achieved the objectives sought.

Prices established under the ceiling were in the aggregate high enough to encourage increased production of chickens, broilers, and other poultry, as well as eggs. It was necessary, however, to continue the price-support program for small lots of shell eggs in the Southern

States in order to improve prices in that area. The 1941-42 program was continued into July and August 1942 in Florida, Georgia, South Carolina, and West Virginia. A new program for 1943 was started in February 1943 in these States, as well as in Alabama, Arkansas, Kentucky, Louisiana, Mississippi, North Carolina, and Virginia. A standing offer by the FDA to buy eggs in lots of 10 cases or more at a fixed price in this area did much to stabilize prices and encourage greater production, particularly in those areas where marketing facilities were not well developed.

PRODUCTION FACILITIES AND PACKAGES

Construction of new egg-drying plants continued during 1942-43, during which period 41 new plants went into operation. These were located in areas where egg supplies were adequate and new facilities were warranted. Total capacity of the new plants (on the basis of a 300-day operation, 22 hours per day) is estimated to be 120 million pounds, which quantity brings the total annual capacity for the United States in 126 plants to approximately 425 million pounds of the dried product. This is sufficient to dry all the eggs that will be available for this purpose.

Many applications were received and approved for priorities for poultry-processing equipment, particularly poultry-dressing equipment. Principal items for which priorities have been requested are poultry pickers, poultry-scalding equipment, feeding and holding batteries, cooling racks, and other related facilities.

Containers for poultry and eggs have been revolutionized since the beginning of the war. The scarcity of tin plate necessitated the elimination of this material in the manufacture of 30-pound frozen-egg containers; thus corrugated and solid-fiber frozen-egg containers are in general use today. Likewise, a shortage of veneer stimulated the development of the 30-dozen corrugated and solid-fiber egg case. Research is under way to improve the fiber case, particularly in regard to its tendency to break down in cold storage and in shipment.

GRADES AND STANDARDS

Most of the United States standards for grades of eggs and dressed poultry were revised during 1942-43. Price ceilings for these products were necessarily based on grades, and it was desirable to have the grade specifications identical with the United States standards and grades. The revised standards and grades have been incorporated into the price ceiling regulation.

Official United States standards for quality of individual eggs were promulgated to take the place of the preceding standards. Tentative United States consumer grades were issued to take the place of the tentative United States retail grades formerly in use, and tentative United States procurement grades to take the place of United States export grades for eggs. Tentative United States wholesale grades for eggs were likewise issued to take the place of the previous wholesale grades. Tentative United States standards for classes and grades for dressed turkeys, dressed chickens, and dressed ducks, and for geese, guineas, and squabs were issued to replace the standards formerly in use.

Considerable work was done in formulating specifications for dried eggs and although no United States grades have been issued for these, the specifications developed have been incorporated into the announcements under which dried eggs have been purchased. Additional work has been carried on in developing specifications for frozen eggs and in revising the United States standards for classes and grades for live poultry.

A revised color chart, showing the appearance before the candle of eggs typical of the four basic United States grades, has been prepared and is being distributed in place of the previous color chart.

MANUFACTURED DAIRY PRODUCTS

During the latter half of the fiscal year, production of manufactured dairy products began to recede from the all-time high levels reached earlier in the fiscal year. This decline was the combined result of a leveling off in total milk production, and a continued steady increase in the volume of milk sold as fluid milk and fluid cream. At the same time war demands for cheese, evaporated milk, dry whole milk, and dry skim milk, as well as for creamery butter, products which could be shipped and stored, necessarily increased. The over-all supply picture and the character of distribution problems under these conditions shifted drastically during the year.

In July 1942 for example, the FDA had to ask manufacturers of evaporated milk to curtail production. More than 20 million cases of evaporated milk were in the hands of the Government and the shipping situation was such that deliveries to our allies, as well as those to our military forces, were relatively small.

Evaporated milk production was reduced sharply beginning in August, but civilian demand increased sharply. During December, January, and February, civilian supplies were so short that substantial quantities of evaporated milk were released into civilian trade channels. When the shipping situation improved and war demands increased sharply in the spring of 1943, there was not enough milk available to increase production rapidly and the requests of all of the claimant agencies for evaporated milk could not be met. Furthermore, it became necessary to inaugurate consumer rationing of evaporated milk early in June 1943. Supplies of evaporated milk for civilians, the armed forces, and our allies will be smaller than demand for as long as the war lasts.

A shift of essentially the same character took place in the supply and distribution of dry skim milk. In the fall of 1942, supplies of spray process powdered skim milk were short, but Government holdings of roller-process powdered skim milk were very heavy. Part of these stocks were released to the trade in November, December, and January in order to relieve the storage situation and to provide powder to bakers so that they could comply with the milk content requirements of FDO No. 1 (bakery products). By the end of the fiscal year, total production of powdered skim milk was running substantially below a year ago and an order was issued requiring all manufacturers of powdered skim milk to set aside 75 percent of their production for sale to the Government. Even with this order it has been necessary

to deny many urgent requests from allied and military claimants for dry skim milk.

Production of dry whole milk has continued to increase and by June 1943, was sufficient to supply urgent war requirements and to leave approximately normal supplies in civilian trade channels.

Production of both cheese and creamery butter declined somewhat during 1942-43 under the general impact of a lower total supply of milk for manufacturing purposes and both products were placed under point rationing late in March 1943. Supplies of American cheese, in particular, have been substantially less than the requests from various claimant agencies for this product.

TABLE 19.—*Production of dairy products in the United States, by fiscal years*

| Year beginning July | Creamery butter | Cheese, American | Evaporated milk unsweetened, unskimmed, case goods | Dry or powdered whole milk | Dried or powdered skim milk (human use) |
|---------------------|---------------------------|-------------------------|--|----------------------------|---|
| 1935 | 1,000 pounds 1,649,378 | 1,000 pounds 491,031 | 1,000 pounds 1,839,510 | 1,000 pounds 19,088 | 1,000 pounds 199,858 |
| 1936 | 1,629,899 | 497,528 | 2,070,956 | 14,363 | 243,150 |
| 1937 | 1,685,302 | 536,900 | 2,025,124 | 18,078 | 267,008 |
| 1938 | 1,826,594 | 538,721 | 2,092,975 | 22,703 | 279,212 |
| 1939 | 1,790,649 | 567,905 | 2,307,020 | 28,152 | 298,925 |
| 1940 | 1,880,793 | 647,134 | 2,649,584 | 37,571 | 345,806 |
| 1941 | 1,789,246 | 936,605 | 3,903,454 | 51,428 | 475,795 |
| 1942 | 1,764,710 | 794,141 | 3,064,826 | 103,649 | 513,778 |

ALLOCATIONS AND PROCUREMENT PROCEDURES

The dairy products most essential in direct war programs were fairly plentiful until late in 1942. Beginning in November 1942, however, it began to be necessary to take emergency steps to implement the allocations of the various dairy products among the war agencies and among civilians. These emergency steps were along three main lines: (1) Limitation orders restricting the use of milk for particular products; (2) Controlled distribution of limited supplies of particular products among civilians; and (3) Set-aside or reservation orders requiring that a specified part of the production of various products be reserved for sale to Government agencies.

Limitation orders were first placed on the sale of cream and the production and sale of ice cream in November 1942, and replaced by revised food orders effective early in February 1943. On cream, FDO No. 13 prohibits the sale of cream having a butterfat content in excess of 19 percent, except sales on physicians' prescriptions, and except sales in those States where the order conflicts with State laws. The order is designed to divert approximately 80 million pounds of butterfat to more essential uses.

The frozen-dairy-food and mix limitation, FDO No. 8, applies to approximately 15,000 "processors" manufacturing products which include ice cream, ice milks, milk ices, frozen custards, sherbets, ice cream mix, ice cream powders, milk shake mix, and similar preparations. It is intended that the milk saved under FDO No. 8 will be available for consumption as fluid milk, or for processing into milk powder, cheese, butter, or other products in greatly increased demand

by the armed forces, civilians, and allied nations. Savings under the order are estimated to approximate the equivalent of nearly 100 million pounds of butter and over 60 million pounds of dry skim milk a year.

To accomplish this saving, the order provides that: (1) Processors must limit the utilization of total milk solids in all frozen dairy foods to 65 percent of the base period, December 1, 1941, to November 30, 1942; (2) the total milk solids content of all ice cream and related products must not exceed 22 percent, by weight; (3) processors may not use more than 8 parts of milk solids-not-fat to each 10 parts of milk fat in ice cream; and (4) processors may utilize for the production of frozen dairy foods other than ice cream (sherbets, custards, ice milks, etc.) up to 10 percent of the quota of total milk solids, or, if within their quota, the same amount as they used during the base period, whichever is the higher.

Deliveries of ice cream and other frozen dairy foods for the armed forces are permitted under the order. Ice cream made for the armed forces, however, may not exceed the limits set on total milk solids content and the ratio of 8 parts of milk solids-not-fat to 10 parts of milk fat.

Distribution of manufactured dairy products among civilians has been facilitated through the controlled release of evaporated milk and skim milk powder during December and January, and through the rationing of butter, cheese of all types other than cottage cheese, and evaporated and condensed milk. Through rapid shifts in war requirements and the operation of price-supporting purchase programs, the FDA had accumulated large stocks of roller-process skim milk powder and evaporated milk by the end of 1942. Close to 4 million cases of evaporated milk and over 20 million pounds of skim milk powder were resold to the trade during the months of short civilian supply, to be distributed in the areas of the most critical shortages.

Direct war demands for dairy products increased sharply in the spring of 1943. It became necessary, with supplies restricted, to initiate consumer rationing of certain products. Butter and the principal types of whole milk cheese were rationed late in March 1943. Evaporated and condensed milk rationing was started early in June 1943. Other types of cheeses also were placed under rationing at about the same time.

The set-aside or reservation orders on dairy products were jointly designed (1) to implement consumer rationing by leaving in civilian trade channels only the approximate allocation to civilians each month, and (2) to serve as a procurement technique to insure war agencies their allocated supplies. Price ceiling plans contemplated no pattern of seasonal variations in price and no storage operations by the trade, since it was apparent that the quantity allocated to civilians would be about equal to or less than production in the lowest months of production. Variations in the percentage required to be set aside for sale to the Government were planned to accord roughly with seasonal variations in production. Thus, purchases are heavier in the heavy-production months and Government stocks are built up to supply war needs during the short-production season.

An order issued by the War Production Board in November 1942 (later reissued as an FDO order) required half of the butter in storage in 35 cities to be held for sale to the Government. This was necessary to meet an acute procurement problem for the Army and for Russia. The permanent set-aside order on butter became effective on February 1, 1943, requiring every manufacturer, producing more than 12,000 pounds of butter in any month of 1942 or in January 1943, to set aside and hold for delivery to designated agencies at least 30 percent of the quantity produced beginning February 1, 1943. The percentage was raised to 50 percent for May, June, and July 1943, and will be lowered as production declines seasonally.

As a result of the order, urgent military requirements were met on schedule. Maximum industry cooperation was achieved, and it became apparent that the order or some modification of it should be continued as the best method of dividing limited butter supplies.

The order on cheese, FDO No. 15, which follows a pattern similar to the butter order, provides that each cheese manufacturer who produced more than 8,000 pounds of Cheddar cheese in any calendar month during the period from January 1942 through January 1943 shall set aside and hold for delivery to designated Government agencies a specified percentage of his manufacture. These percentages, varied monthly so as to leave approximately the same amount of cheese available for civilian consumption, were fixed at 50 percent for February, March, and April; 70 percent for May, June, and July; 60 percent for August and September; and 50 percent for October.

On skim milk powder, the first set-aside order applied only to spray process powder. Issued early in November 1942, it reserved 90 percent of the production for Government use. Demands during early 1943 for skim milk powder became so heavy that most claimant agencies requested either roller-process or spray-process powder. As a result, this early order was replaced on June 1, 1943, by FDO No. 54 which reserved 75 percent of both spray and roller skim milk powder for sale to designated Government agencies. This percentage will not vary seasonally to the same extent as for butter and cheese.

For whole-milk powder, the high perishability of the product has precluded the building of Government stocks and has indicated a procurement schedule closely geared to needs. The small number of processors and well-organized industry associations have made formal procurement orders unnecessary for evaporated and condensed milk.

CHEESE SUBSIDY PROGRAM

Cheddar cheese prices were unusually low in relation to other dairy products when price ceilings were established in October 1942. Action was necessary to make the value of milk for cheese production equal to its value in producing other dairy products in order to maintain the production of Cheddar cheese in large volumes for military and lend-lease uses. In view of the "hold-the-line" general price policy, a cheese subsidy program was adopted in lieu of an increase in ceiling prices of cheese, after consultation with and upon advice of the Director of Economic Stabilization.

The subsidy program became effective December 1, 1942. It has been financed by the Commodity Credit Corporation and administered by the FDA, which has used the services of the Dairy Products Marketing Association in carrying out the mechanics of the program.

Briefly, the program has been operated as follows: A standard offer of the Commodity Credit Corporation was distributed to cheese factories and accepted by them. It provided that the Commodity Credit Corporation would purchase cheese produced by factories on the basis of 27 to 27½ cents per pound, according to moisture content of the cheese, and simultaneously resell the cheese to the factories on the basis of 23½ cents, the ceiling price. Each month the factories would file applications for the difference of 3¾ or 4 cents per pound. Provision was included to require factories to distribute the subsidy to producers supplying milk in addition to prices otherwise paid for such milk.

From December 1, 1942, through June 30, 1943, \$11,377,000 were paid to approximately 1,900 cheese factories for 300 million pounds of cheese. It is estimated that by enabling Cheddar cheese factories to pay as much for milk as other dairy processing plants pay, the program has maintained cheese production at least 100 million pounds above the production that would have been possible without either the subsidy or an upward adjustment in prices.

DAIRY PRODUCTS STANDARDS

Revised official United States standards for grades of creamery butter were promulgated and tentative United States standards for grades of Cheddar cheese, dried skim milk, and dried whole milk were issued. In addition, suitable specifications for products needed for special war uses have been developed and standards for other dairy products studied. Such standards and specifications are used in connection with all purchases of dairy products for Government use and also are available to the whole dairy industry.

PROCESSING AND MARKETING FACILITIES

Some materials and equipment for repairs and replacements have been provided the dairy manufacturing industry under orders issued by the War Production Board. The FDA has assisted both the industry and the WPB in this connection bringing to the attention of that agency cases needing emergency action.

The major potential sources of more milk solids are the areas where farmers normally have separated the milk, retained the skim milk for livestock feeding, and delivered the cream to creameries for manufacturing into butter. Accordingly, the FDA has tried to expand present facilities and establish additional facilities for delivering, handling, and processing whole milk in such areas as fast as farmers have shifted from cream to whole-milk deliveries. The FDA has encouraged such shifts and such expansion.

Because of greatly increased war requirements, major emphasis was placed on expansion in facilities for producing dried skim milk and dried whole milk during the fiscal year. Priorities were recommended on equipment for about 70 drying units, principally for dried skim milk. In addition, priorities were recommended on numerous items of equipment to enlarge the capacity of existing drying facil-

ties as well as facilities for processing other dairy products from whole milk.

Encouragement was given to expansion of facilities for making such products as casein, dried buttermilk, dried whey, and milk sugar. Such products contribute needed supplies for human food, industrial uses, or animal feed. In some cases, the volumes or quality of skim milk or whey are not adequate at the start to warrant establishing facilities only for producing human food. The establishment of facilities which may be used for one of the three purposes, however, encourages and permits a gradual improvement in quality and an increase in volume suitable for human food.

The program for the financing of facilities in cases where other financing was not available was continued during the fiscal year. This program is available to farmers' cooperatives who arrange with the Farm Credit Administration or Farm Security Administration to obtain temporary loans with which to construct new facilities. It provides that upon completion of the facilities, the Government will purchase and lease them to the cooperatives for operation upon agreement by the cooperatives to sell the products to the Government. It also provides that the cooperatives may purchase the facilities at the end of the emergency.

During the fiscal year eight skim milk-drying-facility projects were approved. Several more were in process of development at the end of the fiscal year.

Nine applications for certificates of necessity were recommended. These certificates, issued by the War Department, authorize private corporations to amortize over the period of the emergency investments in facilities deemed necessary to the war effort.

A program was developed in cooperation with the Office of Defense Transportation and the War Production Board for the construction of almost 200 new tank trucks. Their allocation was handled largely on the basis of analyses of needs and individual recommendations by the FDA.

Special problems have been encountered with respect to the supply of tin and steel for farmers' milk cans, as well as for evaporated milk and condensed milk, processed cheese, whole milk powder, and milk infant foods; wooden boxes for export shipments; and with respect to paper for fresh milk containers and other uses. Experimental work with the industry has in several cases facilitated the use of substitute materials, and the maintenance of a close working relationship with War Production Board and others has prevented serious delays due to package problems.

FLUID MILK AND CREAM

Increased sales of fluid milk, fluid cream, and fluid byproducts such as buttermilk and cottage cheese, took place in all major milk markets during 1942-43. Higher consumer incomes and the scarcity of other foods, particularly coffee and soft drinks, were largely responsible. In many individual markets, the problem of supplying the heavier demands were intensified by the influx of war workers and military personnel. In all areas, however, per capita sales in June 1943 appeared to be 8 to 12 percent higher for fluid milk than in June 1942.

Retail milk and cream prices were "frozen" in May 1942 at the March 1942 level under the General Maximum Price Regulation.

During the winter and early spring of 1942-43 prices in most major markets were increased about 1 cent per quart, although in many smaller markets the prices had not been changed by July 1943. In February 1943, prices which might be paid producers for milk for fluid-milk use were frozen at the January 1943 level. These regulations have been generally effective in stabilizing such prices, but they have also influenced both the production and the sales of fluid milk.

In many of the markets along the Atlantic, Gulf, and Pacific coasts, local milk supplies were inadequate to meet local demands during all or most of 1942-43. It has been necessary to ship milk into these areas from other markets which traditionally have large quantities of milk in excess of their fluid sales. The concentration of military training camps in the Southern States has necessitated the movement to that area of a great deal of milk from northern markets. In some cases, this milk has been moved in bottled form from other markets. In other cases, milk processors have expanded their facilities in the South and have transported the milk in bulk form.

Continued increases in fluid-milk sales have exerted tremendous pressure on milk health regulations and resulted in fluid milk dealers reaching out farther for supplies and attempting to transfer large producers from manufacturing outlets to fluid markets. There is every prospect that this pressure will become even greater in the fall and winter of 1943-44 unless corrective measures are taken. Plans were moving forward at the end of the year to put into effect a series of local limitation orders.

MILK MARKETING ORDERS AND AGREEMENTS

There were 26 marketing agreement and order programs in effect for fluid milk during all or part of the fiscal year ended June 30, 1943, under the authority of the Agricultural Marketing Agreement Act of 1937, as amended. Approximately 130,000 producers, handling about 14 billion pounds of milk worth more than 408 million dollars were subject to this marketing-agreement program.

During the year 21 hearings were held; 20 held at the request of producers, related principally to questions of price increases; the other related to an Emergency Price Amendment proposed by the FDA. This amendment grew out of a study which showed that the roll-back and subsidy program announced for butter would have the effect of changing the prices paid to producers in Federal order markets. The amendment provides that in calculating prices, market administrators should use the average market price quotation or the quotation plus any subsidy payments, whichever is higher. This amendment was issued, effective June 21, 1943, in the following markets: Fort Wayne, Ind.; La Porte County, Ind.; Louisville, Ky.; New Orleans, La.; Quad Cities (Ill.-Iowa); St. Louis, Mo.; Toledo, Ohio; Greater Boston, Mass.; Dubuque, Iowa; Fall River, Mass.; Greater Kansas City (Kans.-Mo.); Lowell-Lawrence, Mass.; Omaha-Council Bluffs, Nebr.; Philadelphia, Pa.; Sioux City, Iowa; Washington, D. C.; Duluth-Superior (Minn.-Wis.); Cincinnati, Ohio; Chicago, Ill., and, effective June 24, in New York City.

In addition to the Emergency Price Amendment added to all orders (20) in effect in June 1943, 17 amendments to existing orders were issued. Final action on hearings held in Louisville and the Duluth-

Superior markets was still pending July 1, 1943. One hearing resulted in a new program, that in St. Joseph County, Ind. A proposed new program in Cumberland, Md., failed to receive the required producer approval to make it effective. The regulation in Memphis, Tenn., on which a hearing had been held in June 1942, became effective October 4, 1942. This order was suspended at the request of the producer cooperative in January 1943 and was terminated in June 1943.

Several old license programs were terminated during the year, including those at Kalamazoo and Detroit, Mich., and at Fall River and New Bedford, Mass.

A new order was put into effect in Cincinnati, Ohio, in November to take the place of the mediation agreement in effect at that time. It is anticipated that the former order for Cincinnati will be terminated during the 1944 fiscal year.

Many of the marketing agreements and orders have provisions for seasonal price reductions for the summer months. Provisions of this type were suspended this past year in order to encourage production in a number of Federal markets, including New York, Chicago, Toledo, and Louisville.

Relief milk provisions in agreements and orders, providing that producers get less for milk used for relief milk purposes than for milk used for other fluid uses, were also suspended in several of the markets.

Handler compliance with milk marketing orders continues to be practically complete in all markets. During the year about 50 new cases arose. Approximately 20 of these resulted in court action, and 30 cases which arose during the year have not yet been taken to court. About 130 legal actions, taken on account of noncompliance with orders, were pending on June 1, 1943. These cases involved about \$1,200,000 due market administrators and a small amount due producers. Noncompliance represented only about 5 percent of the number of handlers who are subject to milk orders and probably less than 1 percent of the volume of milk regulated under milk orders.

In all cases litigated during the past year in which the violations consisted of failure to file reports, underpayments to producers, failure to pay administrative assessments, or failure to pay producer-settlement charges, the handlers have been ordered by the courts to comply.

There were about 49 petitions which had been filed under section 8c (15) (A) of the Agricultural Marketing Agreement Act of 1937 pending on July 1, 1942. The petitions that have been filed generally challenge interpretations of the orders. A few challenge the legality of provisions which have been included in milk orders. In the majority of the cases disposed of during the year, the Secretary has denied the relief requested by the petitioner.

FLUID MILK PURCHASE AND RESALE PROGRAM

To implement the actions for higher prices to producers of fluid milk in the face of retail price ceilings, a program was developed to purchase and resell fluid milk to handlers at a loss. This program has been financed by the Commodity Credit Corporation and has been operated by the FDA in cooperation with the Federal milk market administrators. The program was first approved by the President on

October 2, 1942, with provision for its operation during the last 3 months of the calendar year 1942. It was designed to make it possible to raise prices to fluid milk producers without increasing the cost of milk to consumers.

The program as originally recommended and approved was established in three federally regulated milk marketing areas; namely, the New York metropolitan area, the Duluth-Superior area, and the Chicago area. It was terminated on December 31, 1942, and was superseded by adjustments in retail price ceilings which were authorized by the Director of Economic Stabilization. The total cost of the program for this initial period was \$2,433,000.

A new purchase-and-sale program was approved by the Director of Economic Stabilization on April 15, 1943. Producer price increases had been authorized in a few areas just prior to the President's "hold-the-line" order of April 8; however, in view of the President's order, handlers were not permitted to raise retail prices. In order to handle the conflict the purchase-and-sale program was renewed. The new program was established in the following markets: Washington, D. C.; Arlington-Alexandria (Va.); Baltimore; Philadelphia; suburban Philadelphia; Pennsylvania areas Nos. 4, 6, 8, and 12; Wilmington; and Omaha-Council Bluffs; at a cost of approximately \$570,000 per month.

The plan followed under these programs was for the Commodity Credit Corporation to purchase milk distributed in each market for consumption as fluid milk, to pay for this milk the prices which handlers were obliged to pay to farmers. The milk was resold to the handlers by the Commodity Credit Corporation at lower prices. Handlers participating in the program were required to comply with the maximum-price regulations for milk issued by the Office of Price Administration, with the applicable Federal milk orders, and with Food Distribution Order No. 11.

MILK MARKETING ECONOMIES

Shortages of manpower, gasoline, rubber, and other vital resources, together with the desirability of keeping living costs within reasonable limits, showed that a close study of the fluid-milk industry should be made to find ways and means of cutting down the cost of distributing fluid milk. A number of research projects, both on a national and specific market basis, were undertaken.

On the basis of these surveys, Food Distribution Order No. 11, issued in January 1943, required action by the milk industry on a Nationwide basis to simplify distributors' operations. This was a preliminary step to further orders which might be issued in particular markets. More detailed work looking toward detailed economy programs has been undertaken for a selected number of local markets, particularly for New York and Chicago. No local programs have been made effective so far, although several are still under active consideration. In such programs, it would be necessary to coordinate the work of a number of governmental agencies. Also, each such program raises a number of major policy questions on labor relations, standards of service, and public regulation of the milk industry.

INSPECTION AND GRADING OF DAIRY AND POULTRY PRODUCTS

Inspection and grading work during the year on dairy and poultry products was affected to a considerable extent by a tremendously increased demand for grading service on account of purchases of dairy and poultry products by governmental agencies, and others, in connection with the war effort. Such purchases are based on United States grades. Inspection, grading, and check-weighing of dairy and poultry products, therefore, establish the basis for payment for such products for use by the armed forces and lend-lease, under the various set-aside orders, and also determine compliance with contract specifications. OPA price regulations for dairy and poultry products, being in most cases based on United States grades, resulted in an increased demand for grading service on the products included in such regulations.

The inspection and grading work in 1942-43 continued to operate on a self-supporting basis. In order to handle adequately the large increase in volume of work on this basis, the FDA enters into cooperative agreements with the States, and practically all the States are now under such agreements. New agreements were drawn up during the year with Connecticut, New Hampshire, New Jersey, Maine, Louisiana, Kentucky, Colorado, Montana, and Wyoming. Agreements were also submitted for approval to Vermont, Rhode Island, Idaho, and other States which have previously signed agreements.

An additional supervisor of cheese grading was assigned to the Midwest area, and a supervisor of butter and cheese grading to the Pacific coast area. Regional egg and poultry grading supervisors have been assigned to five regions, with headquarters at Atlanta, New York, Des Moines, Dallas, and Denver, respectively. In addition, resident samplers have been placed in all egg-drying plants that sell to the Government, and resident supervisors have been placed in all egg-breaking plants where the product will subsequently be dried and sold to the Government. The increased sale of dairy and poultry products to governmental agencies on the basis of the United States standards of quality has also resulted in a large increase of resident graders in plants throughout the country for the purpose of grading eggs and poultry.

Increased demand for eviscerated poultry has resulted in considerable expansion in the grading of such products. On June 30, 1942, there were 53 plants throughout the country under inspection. By June 30, 1943, this number had increased to 69. This increase necessitated the establishment of a new supervisory office in New York City to cover the northeast region. Additional offices are being set up at Omaha and at San Francisco. Further expansion of this program is anticipated.

MARKET NEWS FOR DAIRY AND POULTRY PRODUCTS

Much space on market reports for dairy and poultry products during 1942-43 was devoted to outlining and explaining new regulations on price or sales procedure. Additional space also was devoted to storage movements, new types or channels of trade, the adequacy of local supplies, differentials in price according to grade, and to variations in price according to volume, package, and type of sale.

Market news work was expanded in several respects during the 1943 fiscal year in an attempt to supply these increased needs for accurate, current, and comprehensive reports. Federal field offices at New York, Baltimore, Pittsburgh, Chicago, Philadelphia, Boston, Denver, San Francisco, Los Angeles, Portland, and Seattle, were continued. Offices at Detroit and Richmond were maintained in cooperation with State agencies. The Houston office was closed in May 1943, for lack of personnel and an office at New Orleans was closed on June 30, 1943, after 6 months of operation, because of a reduction in funds.

A new agreement with New York State and New York City became operative during 1942-43 to provide added news on the live-poultry market. Market news on live-poultry receipts at Boston, Philadelphia, Chicago, Cleveland, and Detroit was also initiated during the year. This new work has been particularly related to the price ceiling regulations on poultry.

FATS AND OILS

It was estimated at the beginning of the 1943 fiscal year that 12.5 billion pounds of fats and oils, consisting of 11,535 million pounds from domestic materials and 965 from imports and imported materials, would become available during the following 12 months. Prospects for crops at that time were good and became even better as the season progressed. As a result, estimates made in October and November were still more optimistic.

But the actual production of fats and oils failed to come up to expectations. Although complete figures on production were not available at the end of the fiscal year, the quantity of fats and oils derived from domestic materials can be placed at 10.5 billion pounds or 1 billion short of the amount expected 1 year ago. Imports of fats and oils and oil-bearing materials (in terms of oil equivalents) only slightly exceeded 800 million pounds, or some 165 million pounds less than was anticipated. Thus, total supplies becoming available during the year were almost 1.2 billion pounds less than the estimates made during the first part of the year.

The largest deviations from the estimates were in butter, lard, inedible tallow and grease, peanut oil, and soybean oil. The only important excess of actual production above the estimate was in the case of linseed oil and amounted to approximately 100 million pounds.

In the case of soybeans, some loss undoubtedly resulted from failure to get the entire crop harvested. Larger than estimated amounts of several crops were used for purposes other than the production of oil, peanuts being the most conspicuous example. Hogs were not marketed as early as was expected. An unusually large proportion of livestock was slaughtered on the farm or by agencies other than federally inspected packers, with resulting lower yields of animal fats. Also, prices and the scarcity of meat discouraged the separation of fat from meat. The rendering industry operated under serious difficulties during the year.

Estimates of requirements were: For domestic use, 9,825 million pounds; for export 1,675 million pounds, or a total of 11.5 billion pounds. Actually, domestic consumption for the year was approximately 10.4 billion pounds and exports 1 billion, or a total of 11.4 billion pounds. In other words, exports were not as large as were antic-

ipated, but the gain in this respect was almost exactly offset by larger domestic consumption.

The Food Requirements Committee calculated that the restriction of requirements to 11.5 billion pounds would permit factory and warehouse stocks to increase from 2 billion pounds at the beginning of the year to 3 billion at the end and thus provide a stock pile or reserve of 1 billion pounds for post-war and other emergency uses. Actually, stocks decreased some 100 million pounds.

CONTROL MEASURES

On July 1, 1942, the following War Production Board orders were in effect with respect to animal and vegetable fats and oils: M-71, The General Control Order on fats and oils; M-57, tung oil; M-66, cashew nut shell oil; M-60, coconut and other lauric acid oils; M-59, palm oil; M-77, rapeseed oil; and M-58, glycerine. The first of these orders, M-71, became effective December 29, 1941, and it imposed very general restrictions on the size of inventories that individual firms were allowed to carry. The remainder of the orders, with the exception of M-58, glycerine, had to do with the important imported oils whose source of supply had been cut off by the war. Close controls were imposed upon the use of palm oil, cashew nut shell oil, and rapeseed oil, and the use of lauric acid oils was largely confined to those products from which glycerine was obtained. This control had been strengthened further by a stock pile and import-control policy, acting under Orders M-57, M-59, and M-60, which placed a large part of the supply of the high lauric acid oils, palm oil, and tung oil in the hands of the Government.

The first important step after July 1 toward control of the domestic vegetable oils was taken when the Chairman of the War Production Board on August 15 issued Directive No. 7, delegating authority to the Commodity Credit Corporation to control the marketing and crushing of oilseeds and the disposition of crude oils. The next important step was the amendment of M-71 on September 22 which changed the character of that order from an inventory limitation to a use limitation order. This amendment imposed definite quota limitations on the manufacturers of finished products whose principal ingredients consist of fats and oils. In Schedule A, seven classifications of products were set up, and the consumption of fats and oils in each class was restricted to stated percentages of the base period, the average of the corresponding calendar quarters of 1940-41. This movement placed restrictions on most of the important uses of fats and oils. From October 1 to January 1, the following orders became effective: M-235, castor oil; M-238, oiticica oil; M-40, sperm oil; M-193, standards for glycerine recovery. Consequently, by the first of January 1943, specific controls had been put into effect for the imported oils which were in short supply, and a general control had been set up for all fats and oils.

Early in 1943 plans were made to replace WPB orders with FDA food orders, though it was contemplated that the WPB orders would continue in effect until the new FDA orders could be drafted. Experience in administering the orders had disclosed a number of weaknesses in the original orders, and in several cases new problems had arisen. Consequently, the need to reissue the orders was taken as an

opportunity for a complete revision. On March 24 and April 1, the new orders were issued as Orders FDO Nos. 31 to 39, and FDO Nos. 42, 43, and 46. In addition to these, FDO No. 14, restricting the purchase and sale of peanut oil, became effective February 3 (terminated April 26) and FDO No. 29, placing cottonseed oil, peanut oil, soybean oil, and corn oil under complete allocation, became effective on April 16; FDO Nos. 56 and 57, ordering producers to set aside specified portions of their production and inventory of raw linseed oil, became effective on June 24. On July 1, 1943, three additional orders became effective: FDO No. 53 restricted the use and distribution of animal oil, neat's-foot oil, and red oil; Order FDO No. 59 ordered producers of crude fish oil to set aside specified portions of their production, and Order FDO No. 60 imposed restrictions on the distribution of fish oil. Since July 1, two orders have been enacted: FDO No. 63, to restrict delivery of linseed oil, and FDO No. 67, to regulate distribution of edible tallow and grease.

The control measures established by FDA may be classified as follows: (1) strict allocation; (2) limitation of use to a percentage of the use in the base period; (3) set-aside orders requiring that a certain percentage of production or inventory be offered for sale to FDA; (4) restrictions on the size of inventories which may be carried at any one time by the firm; (5) control through purchase and stock piling of oils; (6) control through export licenses; (7) control of imports through (a) issuing import licenses to private concerns and (b) allocation of Government-owned fats and oils imported under War Production Board Order M-63; (8) prescribing standards for performance; (9) control of conditions under which an oil may be incorporated in a product, and (10) issuance of priorities.

In the case of allocation orders, each user is required to apply to the FDA, stating the quantity of oil desired and the use to which it is to be placed. These applications are analyzed and definite allocations to firms are made for specified quantities. The authority may be either to accept delivery and to use it or it may be to sell and to make delivery, depending upon whether the order affects the supplier or the user of the oil. The oils under direct allocation are: Cottonseed, peanut, soybean, corn, oiticica, castor, rapeseed, mustardseed, cashew nut shell, sperm, neat's-foot, red oil, lard oil, and tallow oil. In addition, glycerine, a fat-and-oil byproduct, is under direct allocation.

In one type of limitation order, the consumption of each firm is limited to stated percentages of a selected base period. The most important examples of this type of order are FDO No. 42 and the linseed delivery order, FDO No. 63. The FDA has followed the policy of using the averages of the calendar quarters of 1940 and 1941 as the base, on the grounds that this period gives a reasonably fair indication of pre-war demand. Orders usually provide for certain exemptions, such as sales to the Army, Navy, or other military uses, or for shipment to our allies. The quotas established by the provisions of the order, therefore, apply only to the nonexempt use. Another type of limitation order prohibits the use of the fat or oil involved for certain prescribed purposes. For instance, the lauric acid oils generally cannot be used in products other than those from which glycerine is recovered. Also, FDO No. 42 prohibits the use of certain oils for inedible purposes unless specifically authorized by the War Food Administrator.

The set-aside orders are FDO Nos. 56 and 57, on linseed oil, and FDO No. 59, on fish oil. These orders require producers to offer a certain percentage of their oils for sale to the Government. In the main, the purpose of this type of order is to enable the Government to purchase supplies needed for military or lend-lease purposes, but such an order is also used to purchase for stock piles or to assure supplies which are needed for essential war uses.

Main feature of the M-71 order was a restriction on the size of inventories. None of the orders in force at the present time are exclusively inventory restriction orders, but many of them carry provisions which regulate the size of the inventories. Generally, the maximum inventory is that quantity sufficient to provide a supply of oil needed for operations during a stated period of time—for example, 6 weeks or 2 months.

The purchase of oils to be held by the Government for distribution to processors engaged in the production of essential war materials was one of the first control measures used in fats and oils and was first applied to the important foreign oils, tung oil, and high lauric oils, palm oils, and rapeseed oil. It was feared that it would be impossible to replenish the supplies of these oils and hence that it would be necessary to spread the existing stocks over as long a period as possible. Fish oil has also been purchased to assure a supply for certain types of users who, because of lack of storage space and the highly seasonal character of the production of the oil, would have difficulty in meeting their needs.

In the case of exports the FDA cooperates with the Office of Economic Warfare in the issuance of licenses. In the case of imports, fats and oils are either brought in under M-63 through purchases by CCC or by private concerns under license. In the first case, the imported material is resold to those firms to which it has been allocated by the FDA. In the second, the FDA controls the issuance of the license.

Producers of glycerine are required by Order FDO-33 to meet prescribed standards in the recovery of glycerine from the fats and oils processed and to report monthly their actual performance. These reports are analyzed and efforts are made to get improved recovery from the less efficient producers. In the case of sperm oil, definite prescriptions as to the conditions under which the oil may be incorporated in the product are written into the order.

Under Director's Regulation 1, the FDA issues priorities to producers of essential war materials who are having difficulty in obtaining supplies of fats and oils. Also, FDO No. 67, on inedible tallow and grease, will operate in part to give the manufacturers of lubricants, fatty acids, and products other than soap an opportunity to obtain a preference in obtaining supplies. The order provides that producers of inedible tallow and greases must reserve 30 percent of their production to meet orders covered by specific authorization from the FDA. Processors other than soap manufacturers may apply for specific authorization which, in effect, gives them prior claims on supplies.

RATIONING OF FATS AND OILS AND THEIR PRODUCTS

After careful study of the situation that was developing in the field of edible fats, the Fats and Oils Branch recommended to the Admin-

istrator that steps be taken to put edible fats and oils under ration with the over-all allotment suggested in table 20.

TABLE 20.—Allocation of fats and oils for civilian use in 1943 by calendar quarters

| Commodity | Second | Third | Fourth |
|-------------------------|-------------------|-------------------|-------------------|
| | quarter | quarter | quarter |
| | Million pounds | Million pounds | Million pounds |
| Butter (actual weight) | 409 | 409 | 409 |
| Margarine (oil content) | 115 | 115 | 115 |
| Lard | 395 | 395 | 457 |
| Shortening and oils | 484 | 487 | 426 |
| Total | 1,403 | 1,406 | 1,407 |

The total of 1,403 million pounds of fats and oils per quarter thus made available represents a rate of 44 pounds per capita on an annual basis. It was further suggested that the ration system be so devised as to permit manufacturer's use during an annual period at approximately the following rates:

| Type of user: | Percent of 1940-41 average use |
|---|-----------------------------------|
| Confectioners | 80 |
| Mayonnaise and salad dressing manufacturers | 80 |
| Fryers | 80 |
| Commercial bakers: | |
| Butter and margarine | 100 |
| Shortening and oils | 110 |

On March 13 the War Food Administrator addressed a letter to the Director of OPA asking that such action be taken and transmitting the allocation recommended by the FDA. On March 20 Ration Order 16 was issued by OPA to become effective April 1, 1943.

Although it was too early at the end of the 1943 fiscal year to determine accurately the effects of the ration program, it is quite evident that the pressure on the edible oils has been greatly relieved.

FRUITS AND VEGETABLES

In normal times, the distribution of fruits and vegetables probably involves more problems than are encountered with any other category of farm products. In time of war, these problems are vastly multiplied. Both in peace and war the difficulties that are met trace to the complex production and marketing structure that has been developed through the years.

The diversity of fruit and vegetable products is a complicating factor in itself. There are, for example, 57 important fruits and vegetables which are marketed in fresh form or are canned, dried, dehydrated, or frozen. Each segment of the industry has its problems, which frequently differ widely from those of other segments.

Fruits and vegetables, because of their perishability, are hard to handle under wartime conditions. A large crop of wheat, for example, can usually be stored rather easily; but fruits and vegetables, for the most part, must be processed or consumed within a short time after harvest. When yields are high, temporary surpluses develop and special programs must be initiated to support prices and to avoid food waste.

Production of fruits and vegetables generally is concentrated along the Atlantic coast, the Gulf of Mexico, the Pacific coast, and in the Great Lakes area. But these are the very sections where labor for production and processing is most difficult to obtain, because of the competition of war industries. The labor problem is further complicated by the fact that wages paid in the food processing industry are somewhat lower than those paid by some other employers competing in the labor market.

Shortages of tin, burlap, shook, and other materials used for containers have been especially serious. A lack of ice in some areas has hampered the distribution of fruits and vegetables. Gasoline, tire, and truck shortages have accentuated the problem of transportation.

The keen demand for foods that can be shipped and stored under difficult conditions has led to a tremendous interest in dehydrated fruits and vegetables. But prior to World War II, dehydrating capacity was very small and has had to be developed almost from the ground up, which, in many cases, has meant that research has had to be conducted before the dehydrating plants were built.

FRESH VEGETABLES

Because of a tight supply condition and resultant "black market" prices under ceiling regulations, priorities were applied to potatoes during the late winter and early spring months so that the armed forces could obtain supplies. Priorities were invoked first in Idaho and subsequently in the Klamath Basin region of Oregon and northern California, in Colorado, Nebraska, and Maine. These priorities were authorized first under WPB Regulation No. 1 and subsequently under Food Distribution Regulation No. 1.

Commencing April 15, FDO No. 49 took the place of the priority method. This order prohibited shipment from designated areas unless shippers first obtained a shipping permit issued by the FDA. The primary consideration for issuance of such permits was that the potatoes to be shipped had to be offered first to a Government agency. Thereafter, a permit was issued for shipment in commercial channels. At various times, the permit system was in effect in Maine, Alabama, Florida, Georgia, South Carolina, North Carolina, and Virginia. The mid-June supplies of early potatoes were adequate for all requirements and further operation of the order was suspended by withdrawing all areas except Maine from its territorial scope. Operations in Maine were terminated by amendment.

Toward the end of June, potato supplies exceeded requirements. The crop in North Carolina was very late because of bad weather, but potatoes on the Eastern Shore of Virginia and Maryland had a normal season and matured on time. Therefore, instead of the usual separation between the marketing seasons of these two sections, the crops came to maturity simultaneously. Furthermore, the North Carolina crop came to maturity during a period of very hot weather and the highly perishable potatoes decayed rapidly in transit. Ice might have prevented serious losses but there was not enough of it. Somewhat similar situations occurred in Oklahoma, Arkansas, and northeastern Texas.

Throughout the early part of the early marketing season many growers and shippers chose to abandon the customary careful grading and handling practices and packed what was known as a "Victory Grade," essentially a field-run pack with only the smallest and most seriously damaged potatoes removed. This pack carried very poorly and in many instances the potatoes had been in the sun so long they broke down rapidly in transit.

The potato market broke sharply in North Carolina, Oklahoma, and northeastern Texas about June 20, 1943, and on June 23 purchases by the FDA were undertaken as a means of carrying out the price-support commitment to growers made in the Secretary's announcement of February 3, 1943. Under that purchase program, approximately 1,645 cars were reported to have been purchased through June 30, 1943. The result of the program was successful maintenance of the price-support level, and—more important—prevention of serious food waste. The potatoes purchased were canned, dehydrated, used for starch manufacture, or distributed to relief agencies.

Other crops purchased because of disturbed market conditions included onions, cabbage, snap beans, squash, beets, sweetpotatoes, carrots, corn, tomatoes, celery, and peas. These commodities were distributed to institutions or turned over to community canneries for processing for the community school lunch program.

CITRUS FRUITS

Since 1933, marketing-agreement programs have been an important factor in the marketing of citrus fruits. During the 1943 fiscal year, four such programs were in operation. The two programs affecting oranges, grapefruit, and tangerines grown in Florida, effective in 1939, and Desert Valley or winter grapefruit produced in Arizona and California, effective in 1941, are based upon grade and size regulation of shipments. The marketing agreement and order governing shipments of lemons grown in California and in Arizona regulate the volume of shipments, and the same is true of the marketing-order program relating to California-Arizona oranges. The latter program has been in effect for less than a year.

It is estimated that there are 47,950 growers operating under the four marketing-agreement programs now in effect. Preliminary figures show that more than 89 million boxes of citrus fruits were shipped for fresh use, and the equivalent on-tree value of the 1942-43 citrus crop for fresh use is estimated at almost 198 million dollars. Owing to the high level of consumer purchasing power and the need for citrus products for the military forces and the lend-lease program, prices received by producers of citrus fruits during the 1942-43 crop year have been much higher, on the whole, than at any time in the last decade.

Requirements for citrus products also were very high during the crop year 1942-43. Preliminary figures indicate that over 30 million boxes of oranges, grapefruit, and lemons were processed and that the on-tree value of such fruit was more than 30 million dollars.

Four violations of Lemon Order No. 53 were reported. Investigation by the Lemon Administrative Committee and forfeiture of the entire quantity of lemons shipped in violation led to a recommendation of no action in one violation, and a similar recommendation was

made on a second violation. Criminal actions were filed against the violators in the other two cases, which were pending at the end of the year.

There were three violations of Order No. 33 in Florida. In one case, investigation disclosed that the number of boxes shipped in violation was small. Furthermore, the violator had handled only his own fruit. It was recommended that no action be taken in this case. Criminal actions were filed against the violators in the other two cases, both of which are pending.

APPLES

Preliminary consideration given to the prospective apple situation at a meeting with members of the National Apple Planning Committee at Buffalo, N. Y., in August 1942 indicated that no over-all surplus existed but that certain regional dislocations might occur at harvest time. An agreement was reached under which the Food Distribution Administration would, if necessary, purchase at harvest about 2,000,000 bushels of dessert varieties at \$1.25 per bushel, f. o. b., to be used in community school lunch programs.

Such dislocations did occur. In all 2,474,064 bushels were purchased at an estimated cost of \$4,047,242. About 200,000 bushels were purchased in Western States.

Since 1933-34 a marketing-agreement program on English walnuts has been in operation each season to assist the industry in making necessary adjustments to meet existing marketing conditions. The major part of the walnut crop has been marketed unshelled, since this has been the most profitable outlet. Under the marketing-agreement program a certain percentage of merchantable walnuts has been set aside each year for shelling or export, thus protecting the market for unshelled nuts.

At the beginning of the 1942-43 season the industry was confronted with a large carry-over of shelled walnuts and there was a large 1942 crop. The surplus to be withheld from the unshelled market was originally established under the marketing-agreement program at 35 percent of the merchantable nuts but this was later reduced to 10 percent. It was possible to sell approximately 800,000 bags of 100 pounds each in the unshelled market compared with a previous high record of 630,000 bags. Both the shelled and unshelled supplies were practically all absorbed by the trade. A Federal diversion payment to growers was authorized for the 1942 crop at the rate of $3\frac{3}{4}$ cents per pound for merchantable walnuts diverted to shelling or export.

CANNED FRUITS AND VEGETABLES

FDO No. 22 reserves from the 1943 pack a percentage of designated fruits and vegetables packed by each canner in 1942. This makes it possible for each canner to know definitely how many cases he must reserve for the Government. The percentages of packs to be set aside under the order are based upon Government requirements for canned fruits and vegetables, and these percentages are subject to change. The order indicates a contingency reserve, which may be purchased by the FDA for such requirements as develop. In the event the contingency reserve is not required by any of the claimant agencies, it is then released to the canners for civilian consumption. The

amounts of canned fruits and vegetables set aside by this order are subject to purchase only through the Quartermaster's department, and are not available for any other Government or civilian purchasers.

The administration of the offer of the Commodity Credit Corporation for the purchase and resale of designated vegetables consists of the purchase of designated vegetables from growers and of simultaneously selling them to the processor at prices established in the offer. The aim of this procedure, of course, is to support prices at levels that will encourage production of certain crops for processing.

Grower prices for all fruits and minor vegetables used in canning have been developed on the basis of authorizing the processor to use them for figuring his costs for raw material so that he could operate within the ceilings prescribed by the Office of Price Administration for his finished product. In some instances, the OPA has been requested to revise ceilings in order to maintain production, as ceilings would not have permitted processors to operate except at a loss. These recommendations may be made either prior to, during, or after the pack of any item. This information, supplied to the OPA, also makes it possible to administer point rationing on a more effective and equitable basis than otherwise would be possible.

Industry advisory committees have been established, and it is contemplated that a number of these committees will be formed according to products rather than by segments of the industry. It is expected that an advisory committee will be formed for each of the major vegetables, as well as for most of the fruits and some of the minor vegetables.

Purchases of canned fruits and vegetables made are in connection with supply programs for domestic purposes, as well as for requirements of our allies. Purchases of surpluses have been confined largely to vegetables, such as string beans, spinach, and tomatoes, though some fruits have been purchased, the largest single item of these being that of canned fresh Italian prunes.

Some of these surpluses have been sold for civilian consumption. Beginning with the disposal of surplus tomatoes, the stocks on hand were offered first to the original vendors. This procedure disposed of the major part of this product. Subsequent to the first offer, the remaining stock was offered to those who purchased their own pack, and, in this manner, the entire surplus of tomatoes was put back into the channels of trade through canners.

War Production Board Orders M-81 (tin cans) and M-104 (glass containers) were originally administered by the War Production Board, but since March 1943, the FDA has determined what food products should be canned, sizes of cans to be used, and the limitations, if any, on the packs of the respective products. This has made it possible to expedite action regarding appeals and other matters concerning the use of critical materials.

An order was obtained during the year for the release of approximately 20,000 tons of steel that was frozen in inventories, as this stock could not be used for the manufacture of sizes of cans authorized in the order. The release of this metal has made it possible to obtain containers for the canning of baked beans and some other items not listed in the order.

DRYED FRUIT

To meet wartime requirements for dried fruit, the War Production Board issued, on August 10, 1942, Conservation Order M-205, which required dried fruit packers to set aside for delivery to Government agencies their entire holdings and acquisitions, for 1 year after the effective date of the order, of dried apples, apricots, peaches, pears, prunes, and raisins. This order contemplated that any of the dried fruits set aside which were not needed by Government agencies would be subsequently released in civilian trade channels.

On January 30, 1943, this order was transferred to the FDA and superseded by Food Distribution Order 16. As a result of the operation of this conservation program, all the dried apples, apricots, peaches, and pears which were of satisfactory quality, were acquired by the armed forces or other Government agencies. Approximately 132,000 tons of raisins and 102,000 tons of prunes, however, were released for civilian consumption.

Production of raisins in 1942 totaled 254,000 tons, compared with 209,000 tons in 1941, and an average of 229,000 tons for the 1936-40 period. This increase in production was largely due to the effectiveness of Conservation Order M-205a and the superseding FDO No. 17, which required all raisin-variety grapes produced in California to be converted into raisins, if such conversion was possible. This order became effective August 10, 1942.

As a protection to raisin-variety grape producers, the FDA offered to purchase natural-condition raisins produced in 1942 at \$110 per ton for Thompson Seedless and Muscats, \$105 per ton for Sultana, and \$132 per ton for Golden Bleached Thompsons and dehydrated Muscats. Field prices to growers were maintained by packers at levels equal to or better than the support prices established by the FDA, and packers purchased the entire 1942 production.

At the beginning of the 1942-43 marketing season, the FDA announced grower support prices for California and Northwest prunes as follows: 6 cents per pound basis for California Outside District, $6\frac{1}{4}$ cents per pound basis for California Three-District fruit, and for Northwest fruit $\frac{1}{4}$ cent per pound less than that announced for California Outside District for prunes of comparable size. In view of the fact that field prices offered by packers were equal to or better than those announced by the FDA, no natural-condition fruit was purchased.

Support prices for dried apples ranged from $19\frac{1}{2}$ cents to 21 cents per pound for eastern dried apples and $17\frac{1}{2}$ cents to 19 cents per pound for western fruit. These prices reflected returns to farmers for fresh apples at an average of approximately \$27.00 per ton.

Support prices for dried apricots, peaches, and pears were announced at \$380, \$280, and \$260 per ton, respectively, but no purchases from growers were made.

PROCESSED CITRUS FRUIT AND PRESERVES

FDO No. 3, effective January 6, 1943, restricted the production and sale of concentrated citrus juices to Government agencies. Production of single-strength juices was also restricted to the quantities specified in War Production Conservation Order M-86. The purpose

of FDO No. 3 was to channel production of concentrated citrus juices to direct war use, and Conservation Order M-86 was aimed at diverting supplies of processing citrus fruits into the production of concentrates. This order was later amended to remove the restrictions on the production of single-strength juice, provided that concentrating facilities were operated at maximum capacity.

FDO No. 6, effective January 13, 1943, and No. 6.1, effective January 24, 1943, were issued for the purpose of insuring adequate supplies of fruit to processors. Provision was made whereby handlers of fresh citrus fruit were required to set aside specified quantities each week to be made available for processing.

The Pectin Industry Advisory Committee has been unusually helpful in suggesting ways and means of developing a pectin procurement program. Through the excellent work of this committee, a new plant is scheduled to go into operation in the 1944 fiscal year.

In Florida two additional facilities for the production of concentrated orange juice were constructed through funds furnished by the Defense Plants Corporation, adding at least $1\frac{3}{4}$ million gallons per year to the potential production of concentrated orange juice. One of these plants is leased to the Florida Citrus Canners Cooperative and the other to Citrus Concentrates, Inc. The facility leased to the latter is equipped to produce pectin as well as concentrated orange juice. With the addition of these facilities, production capacity for pectin and for concentrated citrus juices is now ample to meet known requirements for these commodities.

Considerable work was undertaken in connection with increased production of jams, jellies, and marmalades, as an aid to obtaining increased consumption of bread. The FDA served as a clearing house for problems affecting the producers of these commodities, and upon recommendation of industry representatives, action was taken to obtain more sugar, raw-material supplies, and equipment needed by producers in the production of jams and preserves. Recommendations were made from time to time to the OPA concerning rationing and allocation of these commodities.

DEHYDRATED VEGETABLES

Work in connection with facilities has included the approval of plants for expansion for vegetable dehydration, the processing of priorities for plant equipment, and field-service work for individual plants. A total of 174 plants are now approved for operations, and plant capacity at the end of the year was over 200 million pounds.

Under FDO No. 30, effective March 21, 1943, all the production of dehydrated potatoes, sweetpotatoes, carrots, cabbage, beets, onions, and rutabagas, was required to be set aside for Government purchase. Dehydrated sweetpotatoes and carrots were later removed from the list.

FROZEN FRUITS AND VEGETABLES

To fulfill lend-lease requirements for strawberries processed with SO_2 and to develop a reserve to be used for substitution of potential shortages of other fruit pulp, contracts were made for 15,680 short tons of "sulfured" strawberries. Because of an exceptionally short

crop and competition from both fresh-market outlets and cold-packers, deliveries on contracts totaled only 1,587 short tons. The strawberries obtained under this program were acquired at 12 cents per pound to the grower plus a contract processing price that averaged slightly under 5 cents per pound.

A program for the expansion of facilities for packing quick-frozen vegetables to approximately 100,000,000 pounds per year to meet military and civilian needs was initiated and completed during the 1942-43 fiscal year. Close cooperation was maintained on this program with the Army's Office of the Quartermaster General.

MARKET NEWS SERVICE

The Food Distribution Administration collects and compiles current information on supplies, commercial movement, distribution, quality and condition, market trends, and prices of fresh fruits and vegetables at major receiving markets and important producing sections. This information is disseminated by mail, radio, the press, telegraph, and telephone, to growers, shippers, receivers, transportation representatives, extension workers, research organizations, and other groups interested in the production and distribution of these commodities.

During 1942, 22 permanent field offices were maintained in the larger cities, and 42 temporary offices, during the active shipping seasons, in important producing sections. Marketing information was distributed to the various permanent offices over approximately 7,770 miles of leased wire.

Mimeographed market reports were distributed by mail to 70,113 individuals and firms, compared with 75,834 last year. A total of 11,013,926 mimeographed reports covering 49 fruits and vegetables, as compared with 14,124,560 the previous year, were distributed during 1942. Market news offices furnished programs which were broadcast over approximately 200 radio stations. In seven of these offices, the market news representatives broadcast the programs themselves.

A weekly summary of carlot shipments and an annual summary of shipments by commodities, States, and months are compiled. With the cooperation of the Agricultural Statistics Division of the Bureau of Agricultural Economics, an annual report is published showing carlot shipments of the various fruits and vegetables by States, counties, stations, and months.

Truck movement from producing areas was reported during the periods that temporary field offices were operated for Georgia peaches, North Carolina strawberries, Del-Mar-Va strawberries, and Michigan deciduous fruits, and for some vegetables. For a portion of the year the State of Florida furnished truck passings of fruits and vegetables at specified north Florida passing points. This service was discontinued during the summer of 1942. The report of citrus movement by truck from the Lower Rio Grande Valley of Texas, which was previously obtained by the Bureau of Entomology and Plant Quarantine at their truck-quarantine stations, was not continued during 1942.

Weekly market news reports on peanuts are issued by the Washington office. These reports cover quotations and a résumé of crop move-

ment and marketing conditions at important shipping points as reported by cleaners and shellers, warehousemen, and brokers. Some supplementary information is carried on the peanut oil and peanut meal markets.

A report is published semi-monthly from Washington on the bee-keeping and honey industry. The f. o. b. part of this report is based on questionnaires which are sent out every 2 weeks to about 600 of the more progressive and better-informed beekeepers located in major honey-producing areas of the country.

PERISHABLE AGRICULTURAL COMMODITIES ACT

In the enforcement of the Perishable Agricultural Commodities Act, 4,935 licenses were issued, a decrease of 482 from the previous fiscal year. Licenses terminated totaled 5,325, a decrease of 301 from the previous fiscal year. The number of licenses in effect on June 30, 1943, was 18,634, a decrease of 380 from the preceding fiscal year.

During the year, 1,889 complaints of violations were filed, which were 229 less than the year before; 404 of the complaints were personally investigated in the field, a decrease of 79; 125 formal decisions by the Secretary were rendered, exactly one-half the decisions made during 1942; reparation was awarded in Secretary's orders aggregating \$59,021.35, a decrease of \$25,852.36 from the awards during the previous fiscal year.

Through administrative effort to adjust controversies amicably without formal action, however, informal settlements were arranged in 1,030 cases, an increase of 46 over the previous fiscal year, and the settlements made through such amicable settlements aggregated \$602,564.94, an increase of \$200,643.25 over the previous fiscal year. The decrease in the number of complaints filed was caused largely because large quantities of fruits and vegetables were purchased by the Government, prices generally were higher than previously, and scarcity resulted in acceptance of shipments with less complaint.

PRODUCE AGENCY ACT

Only 33 complaints were handled under this act, 15 of which were personally investigated during the fiscal year. The small number is explained by the fact that most transactions in fruits and vegetables subject to complaint fall within the scope of the Perishable Agricultural Commodities Act and are handled under it. This leaves for handling under the Produce Agency Act only those complaints relating to consignments of fruits and vegetables which occurred more than 9 months prior to the filing of complaints and to poultry and dairy products handled on consignment.

STANDARD CONTAINER ACTS

In the enforcement of the Standard Container Acts of 1916 and 1928, 70 factories in 9 States were visited. At those factories 92 lots of baskets, consisting of 304 samples, were tested. Of these lots 84 were satisfactory and 8 did not comply with the law. Of the baskets which did not comply with the law, one type and size have been corrected. Received in the laboratory at Washington from 75 factories

were 257 lots, composed of 902 baskets. Of these lots 204 complied with the law and 53 did not. Corrections have been obtained on 27 of those lots that did not comply strictly with the law. Under the 1928 act, 15 sets of specifications were given formal approval.

FRESH FRUIT AND VEGETABLE GRADING AND INSPECTION

United States standards for fresh fruits and vegetables were used extensively during the past fiscal year as a basis for various kinds of governmental purchases. There are U. S. standards for 64 different fresh fruits and vegetables and since two or more standards are necessary for some products, owing to differences in types and uses, a total of 106 standards have been issued. Notwithstanding this fact, the U. S. standards have not always been suitable for certain types of purchases, and in such cases the FDA has had to draw up suitable specifications for the products involved, based for the most part on the standards in effect.

Because of increased purchasing, especially for the armed forces, the Federal Specifications Board has been revising and bringing up to date the Federal specifications. For these specifications the FDA has prepared preliminary drafts, which are reviewed by the Board from time to time before being adopted as official Federal specifications.

During the fiscal year 479,249 cars and carlot equivalents of fresh fruits and vegetables were inspected at shipping points and 31,694 were made in receiving markets. This was a decrease under last year of 27,024 cars at shipping points and a decrease of 6,772 inspections in receiving markets. Cars were loaded approximately 15 percent more heavily than last year, so that although the carload equivalent decreased, the actual pounds or packages inspected increased approximately 10 percent at shipping points and decreased about 2 percent in destination markets.

A large number of the inspections made at shipping points were of supplies purchased by the Quartermaster Market Centers for use of the Army, Navy, or other defense forces. In addition, a greatly increased tonnage of fruits and vegetables was inspected at Navy stations, Quartermaster Market Centers or markets in less than carload lots for the Navy, Army, Quartermaster Corps, Coast Guard, or steamship lines operating under War Shipping Administration charters.

Inspection of this type for defense agencies and other Government, State, and city agencies has increased from 302,582,869 pounds last year to 807,317,149 pounds this year.

Inspections of fresh fruits and vegetables at time of delivery to canning plants has continued to increase in popularity. The total of such inspections of tomatoes and other products amounted to 1,344,942 tons this year, as compared with 1,304,508 tons last year.

Approximately 40 percent of the crop, or 450,000 tons of farmers' stock peanuts, were inspected at shipping points in connection with the 1942 Peanut Marketing Program of the Department.

PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION

Standardization work of the FDA on processed fruits and vegetables falls into three classes: (1) Commercial standards are developed

which are known as United States standards for grades, (2) Federal specifications on which all Government departments procure their requirements, and (3) special specifications frequently used in special purchases such as those in support programs projects.

Inspection work falls into three categories: (1) Commercial inspection service which is rendered to anyone financially interested in a lot of processed foods and is handled by inspectors at a branch office, (2) continuous factory inspection service in which the Administration stations inspectors at plants during the packing season, for continuous service, night and day, and (3) inspections made at the request of Federal departments or agencies, such as the Army, Navy, Treasury, Interior, Forest Service, Marine Corps, and Veterans Administration, and at the request of State governments such as New York and Maryland.

Seventy-two United States standards for grades of processed fruits and vegetables were in effect at the close of the fiscal year. Of this number, 49 were for canned fruits and vegetables, 6 for dried fruits and vegetables, 11 for frozen fruits and vegetables, and 6 for barreled fruits and vegetables, an increase of 12 standards for the fiscal year. Thirteen United States standards for grades were revised.

Seven special specifications were issued for the Office of the Quartermaster General, and six were issued for the Federal Surplus Commodities Corporation.

Research has been continued in the field of food preparation and processing, and inspection and research work incident to developing standards for grades of dehydrated fruits and vegetables has been under way.

The Provisions Committee of the Federal Specifications Executive Committee is charged with the responsibility for the development of specifications for all provisions purchased by the Army, Navy, Veterans Administration, and other Government departments and agencies. An FDA representative is a member of the Provisions Committee and is chairman of the subcommittee that develops specifications for processed fruits and vegetables and for fish. Federal specifications are being amended and revised as rapidly as possible so that the United States standards for grades are being incorporated therein as quality requirements. Five Federal specifications were amended, and six new Federal specifications were issued during the fiscal year.

Early in the year, the Office of Price Administration announced that it would require that the grade be shown on labels of canned fruits and vegetables. After months of discussion with the industry, a compromise ruling was reached which required the vendor to declare the grade of all canned fruits and vegetables sold by him on sales invoices to be stated in terms of grades of the United States Department of Agriculture. It was held that vendors thus placing the grade on sales invoices after having the merchandise graded by the FDA would not be subject to prosecution for price-ceiling violations.

Continuous inspection at plants increased in volume and in number of plants served. Two plants operated under continuous inspection during the fiscal year 1940, 20 plants during the fiscal year 1941, 52

plants during the fiscal year 1942, and 64 companies with 91 plants were in operation during the fiscal year 1943. Plants operating under continuous inspection undergo rigid scrutiny day and night, all packing operations being carefully observed. Merchandise thus packed is finally sampled and the grade determined after the goods have come to rest in the warehouse. Goods thus packed may be labeled in the terms of United States Grade A, United States Grade B, etc., and reference may also be made on the label to the effect that the merchandise was packed under the continuous factory inspection of the Food Distribution Administration.

The FDA was directed by the Quartermaster General of the United States Army and other Government agencies to assume responsibility for the inspection of purchases of canned, frozen, dehydrated, and dried fruits and vegetables, as well as canned fish and large quantities of miscellaneous manufactured food products, such as jams (preserves), jellies, peanut butter, citrus concentrates, sugar, salt, and spices. Inspections are made for the most part at point of origin—that is, at the canner's plant—and frequently the contracts are so large as to require the presence of an inspector at the plant for some time. This work is performed on a reimbursable basis.

Large quantities of products packed in sulfur dioxide, such as strawberries and raspberries, have been inspected. Inspectors usually inspect the product as it is packed and processed. The FDA also has been asked to inspect large stocks of stored merchandise for condition for lend-lease and the Army. During the year the Nation's entire pack of dried fruits was inspected on the basis of Federal grades. Also, the entire pack of canned salmon was inspected at the port of Seattle.

CONTAINER INVESTIGATIONS

Container investigations is a new line of work assumed during the year. This activity involves the development of containers of non-critical material for the packaging of fruits and vegetables in their various processed forms; better utilization of existing packages by increasing the quantity of food that can be packed in them; and studies of the carrying qualities or preservation properties of various types of containers. The container investigations are carried on only for those fruits and vegetables in which the FDA has an interest from a standardization or inspection viewpoint. Thus the commodities covered are limited to processed fruits and vegetables—canned, dried, dehydrated, or frozen.

MARKETING AGREEMENT PROGRAMS

There were 22 marketing agreement programs in effect during the 1943 fiscal year for such commodities as fresh fruits, potatoes, truck crops, tree nuts, and hops. Of these, 11 were in operation during the fiscal year, 7 operated during the entire crop-marketing season, and 4 discontinued operations during the marketing season. The commodities for which marketing agreement programs were in actual operation during the past fiscal year were grown by more than 75,000 growers and had a total farm value of more than \$300,000.

TABLE 21.—*Approximate number of growers and estimated farm value of commodities with marketing agreement programs in effect during the fiscal year 1943*

| Commodity and area | Growers | Farm value |
|--|---------|----------------------|
| | | Number 1,000 dollars |
| Buerre hardy pears—California ¹ | 500 | (2) |
| Fresh bartlett pears, plums, and Elberta peaches—California ³ | 7,500 | 12,700 |
| Fresh peas and cauliflower—Colorado | 650 | 2,400 |
| Fresh prunes—Washington and Oregon | 600 | 1,900 |
| Grapefruit—California and Arizona Desert | 1,450 | 3,900 |
| Hops—Oregon, California, Washington, and Idaho ¹ | 950 | 15,200 |
| Lemons—California and Arizona ³ | 6,500 | 32,900 |
| Onions—Colorado ¹ | 1,100 | 3,100 |
| Onions—Utah ¹ | 180 | 400 |
| Oranges, grapefruit, and tangerines—Florida | 20,000 | 94,500 |
| Oranges—California and Arizona ³ | 20,000 | 123,000 |
| Peaches—Colorado ¹ | 600 | 3,200 |
| Peaches—Utah ¹ | 2,000 | 700 |
| Peaches—Georgia | 600 | 10,000 |
| Potatoes—Colorado ¹ | 4,200 | 16,800 |
| Potatoes—Idaho and Oregon ¹ | 9,300 | 27,900 |
| Potatoes—Oregon and California ¹ | 1,200 | 16,100 |
| Potatoes—Michigan, Wisconsin, Minnesota, and North Dakota ¹ | 110,000 | 49,400 |
| Tokay grapes—California ³ | 1,500 | 2,300 |
| Tomatoes—Mississippi ¹ | 2,000 | 800 |
| Walnuts—California, Oregon, and Washington | 14,000 | 17,400 |
| Winter pears—Oregon, Washington, and California | 3,000 | 11,000 |
| Total, programs in effect | 207,830 | 445,600 |
| Total, programs in full or part operation | 75,800 | 312,000 |

¹ Not in operation during the fiscal year 1943.² Only 2 cars shipped under agreement, remainder diverted to cannery.³ In operation part of fiscal year 1943.

FOOD-ORDER ADMINISTRATION

Eight food orders were developed during the fiscal year, as follows: FDO No. 3, reserving canned citrus-juice production, except grapefruit juice, for sales to the Government and prohibiting domestic commercial sales of canned grapefruit juice during the period January to March 1943; FDO No. 6, requiring handlers of fresh citrus fruits to set aside quantities sufficient to meet the Government needs for processed citrus juices; FDO No. 17, requiring that California raisin-variety grapes be converted to raisins; FDO No. 22, requiring canners to set aside specified percentages of their output of canned fruits and vegetables for Government needs; FDO No. 24 (terminated when rationing of canned goods started), regulating the rate of sale of specified canned fruits and vegetables; FDO No. 30, requiring processors to set aside for Government requirements all stocks and production of specified dehydrated vegetables; FDO No. 49, establishing restrictions on shipments of potatoes from specified producing areas; and FDO No. 55, providing minimum-grade requirements for shipments of California plums.

NATIONAL ADVISORY COMMITTEE

In July 1942, the War Production Board established a special Fruit and Vegetable Section to handle problems relating to production and distribution of fruits and vegetables, as well as priorities and import applications. This section appointed national fruit and vegetable industry advisory committees to work with the participating agencies. Because a large number of different kinds of both fruits and vegetables are packed in many districts and are handled by practically all pack-

ers, shippers, wholesalers, jobbers, brokers, and retailers, it did not seem practicable to develop a special committee for fruits and another for vegetables. Accordingly, two closely cooperating committees were established—one to cover shipping and the other to cover marketing. The aim of these committees was to represent all geographic, commodity, and functional groups throughout the industry.

These committees met on several occasions under the auspices of the War Production Board and supplied much information and advice concerning transportation, warehousing, price control, containers, priorities, and related activities. They also served as a medium for keeping the trade informed concerning activities of various governmental agencies under the War Powers Act. These National Industry Advisory Committees and the Fruit and Vegetable Section of the War Production Board were transferred to the United States Department of Agriculture by Executive order.

At the first meetings of these committees under the auspices of the Food Distribution Administration, the members conferred with branches of the Department of Agriculture and other Government agencies on such national problems as permanent price ceilings on fresh fruits and vegetables, the manpower situation, containers, transportation, procurement purchasing procedure, establishment of local industry advisory committees, and similar matters.

LOCAL INDUSTRY COMMITTEES

After several meetings of the National Industry Advisory Committees had been held, it became apparent that many problems were largely of a local character and that advice was needed concerning the local application of wartime regulations. The national committees felt it necessary that their activities be limited to national problems and, therefore, recommended that the establishment of local and area committees be considered. In addition to the National Industry Advisory Committees, members of the trade and of farm organizations not on such committees likewise indicated the need for local and area advisory committees, and recommended that these be established where local groups requested such action.

The organization of local industry advisory committees, accordingly, has been undertaken in 17 markets and 1 shipping area, in order to obtain the advice which could be given only by those who have actually handled fruits and vegetables. It is anticipated that committees will be set up as rapidly as possible in other markets or areas. Local committees have been and will continue to be set up only where there is need for them and where the local industry has requested them.

GOVERNMENT SERVICES

Considerable work has been done with the various Government agencies on orders administered by them and which are of especial importance to the fresh fruit and vegetable industry. Suggestions are made for the development of these orders, and frequently revisions are suggested which would benefit the fresh fruit and vegetable industry. In addition, information is provided from time to time to the administrators of these orders on problems affecting the fruit and vegetable industry.

The most important of these orders are: Preference Rating Order P-140, establishing preference ratings for containers on the basis of the product which is to be packed; Limitation Order L-290 (western lumber), providing for the limitation of western lumber according to certain uses; Maximum Price Regulation No. 186 (western containers), and Maximum Price Regulation No. 320 (central and eastern containers), establishing maximum prices for containers.

IMPORTS OF STRATEGIC MATERIALS

Order M-63 governs the importation of various products into the United States. Recommendations are made as to industry needs for the various fresh fruits and vegetables imported. During the interval covered by this report, the following fresh fruits and vegetables have been imported: Argentine fruits, 2,700 tons; bananas, 211,361 tons; and miscellaneous fruits and vegetables, such as peppers, limes, and grapefruit, 6,000 tons.

PRIORITY APPLICATIONS FOR PROCESSING MACHINERY

Recommendations as to the needs of the industry are made on applications for construction for machinery to be used in the processing of fresh fruits and vegetables. During the period covered by this report, the following applications have been handled:

In addition to making recommendations as to industry needs for material covered by the above-mentioned applications, quarterly requirements are submitted for the estimated quantities of critical materials to be used by the fresh fruit and vegetable industry. These requirements have been estimated for packing houses and sheds, storage facilities, and the various types of processing machinery.

WOODEN SHIPPING CONTAINERS

Along the lines of conservation, simplification, and standardization, a reduction was effected in the number of sizes of wooden crates and boxes for fruits and vegetables. Effective March 1, 1943, War Production Board Limitation Order L-232 authorized the manufacture of only 64 kinds of such containers, of which more than 400 different sizes had previously been in more or less common use. The containers recognized by the order as being essential to the efficient distribution of fresh fruits and vegetables reflect in a marked degree the observations, experience, and recommendations of the FDA.

SALVAGE AND RE-USE

An educational program was initiated and carried through on the salvage and re-use of fruit and vegetable containers as a means of meeting the industry's requirements. In cooperation with the Agricultural Extension Service and the U. S. Office of Education, several hundred thousand printed circulars of background material, showing the need for maximum conservation, salvage, and re-use, were dis-

tributed. By direct mail to some 19,000 licensees under the Perishable Agricultural Commodities Act, this material and a 14- by 20-inch poster in 3 colors were distributed. Further distribution was effected through the FDA's regional offices, State marketing officials, and trade organizations.

In order to promote salvage operations by dealers and to facilitate the distribution of salvaged containers, a list of dealers in used containers was compiled and mailed to dealers, growers, shippers, State extension services, marketing officials, trade publications and organizations, and others. Items of timely interest relating to containers, including notices of available or needed supplies, have been released at irregular intervals under the heading "Container Notes."

To promote and stabilize salvage operations and distribution, the FDA participated in the formulation of Office of Price Administration Maximum Price Regulation No. 434, which establishes maximum prices on used wooden fruit and vegetable containers at three levels—the original emptier, the accumulator, and the dealer in used containers—with margins believed to be sufficient to make operations at each level profitable and worth while. The prices are admittedly "incentive prices," drawn primarily to encourage the salvage for re-use of all types of fruit and vegetable containers.

SUGAR

Sugar was on the ration list during the entire 1943 fiscal year. Shipments to our allies were very large, and stock of sugar in the hands of primary distributors in the United States were about 500,000 tons (raw value) below normal at the beginning of the fiscal year. Stocks held by industrial, institutional, and household users, however, were believed to be at a much higher level than usual following the record distribution of sugar in 1941.

An important step to assure adequate supplies was taken early in 1943 when the 1943 Cuban sugar crop, totaling 3,225,000 tons, was purchased almost in its entirety by the United States Government. Later in the year the 1943 Puerto Rican crop was bought by the Commodity Credit Corporation, as were the Dominican and Haitian crops for 1943 and 1944.

Arrivals of sugar from offshore areas during 1942 were substantially below normal, particularly during the second half of the year, because of submarine sinkings in the Caribbean and in United States coastal waters. Submarine warfare made it necessary to shorten as much as possible the ocean run between Caribbean sugar ports and the mainland. A so-called shuttle service between Habana and Florida ports was developed, through which small watercraft, such as barges and sailing vessels, brought raw sugar to various Florida ports. From Florida the sugar was shipped to northern refineries, the added freight costs being borne at first by the Defense Supplies Corporation and later by the Commodity Credit Corporation.

Curtailment in sugar receipts to the East meant an increasingly heavy movement of beet sugar to this area, the freight costs being absorbed by the Defense Supplies Corporation and the Commodity Credit Corporation. The very large crop of beet sugar harvested in the autumn of 1942 helped greatly to offset the decline in receipts of offshore sugars.

During the fiscal year the retail price of sugar remained virtually stationary, the national average being about 6.9 cents per pound. Since our entry into the war, the retail price of sugar for the country as a whole has averaged 6.8 cents per pound, compared with 9.7 cents during the last war (April 1917 to November 1918).

1943 SUGAR-BEET PRICE-SUPPORT PROGRAM

A record of 1,050,000 acres was planted to sugar beets in this country in 1942, and the sugar crop produced on this acreage, totaling 1,725,000 tons, was among the largest in our history. This was the first crop planted and harvested following our entry into the war.

When 1943 food production goals were announced in the fall of 1942, the sugar-beet-acreage goal was established at 1,050,000 acres, or the same acreage as that planted in 1942. Formal negotiations on measures to maintain 1943 sugar-beet production were initiated by the FDA in December 1942 with representatives of the beet-sugar industry. After various conferences between department officials and a committee representing the industry, Secretary Wickard on February 10 announced a program designed to assist sugar-beet growers.

The program, which was implemented by contracts between Commodity Credit Corporation and sugar-beet processors, provided that, without raising sugar ceiling prices, growers would receive for their 1943 crop an increase of \$1.50 per ton of sugar beets of average quality over the price called for under 1942 crop contracts. This meant a total of \$11.00 per ton—the highest price in more than 20 years and about 120 percent of parity. The agreement with the Government protects both processors and producers against market declines during the entire 1943 beet sugar marketing season, which runs until the end of September 1944, and against abnormal transportation costs due to war movement of beet sugar to areas where it is not normally used. This method of assuring increased returns to beet growers was followed in order to disturb as little as possible the usual relationships between growers and processors.

But because of uncertainty over the labor situation, competition with other crops, discouragement due to difficulties in harvesting the 1942 crop, unfavorable weather at planting time, and the feeling on the part of some growers that the price offered for beets was too low, the acreage planted to sugar beets in 1943 was the smallest in years.

A price-support program for the 1943 Louisiana crop was announced later in 1943. This program provided for an increase of 33 cents per ton of sugarcane and thus made it possible for growers in that State to pay the wages necessary in order to enable harvesting of the 1943 crop.

STIMULATION OF INSULAR FOOD PRODUCTION

The farming practice requirement, which is one of the payment conditions under the sugar program authorized by the Sugar Act of 1937, served in 1943 to encourage food production in Puerto Rico, Hawaii, and the Virgin Islands, thus lessening the dependence of these areas on foodstuffs from the mainland. Puerto Rican growers who wished to receive payments under the sugar program were required to plant

an acreage equal to 20 percent (as compared with 7 percent in 1942) of their land on which sugarcane was growing on January 31, 1943, to soil-conserving food crops, of which only 50 percent (as compared with 80 percent in 1942) had to be leguminous crops. In the Virgin Islands the requirement was increased from 7 to 10 percent and the leguminous-crop requirement was dropped from 80 to 60 percent.

In Hawaii, the farming-practice determination for the first time included a provision requiring the planting of food crops on an acreage equal to one-tenth of an acre for each adult male laborer employed on the farm in the production of sugarcane on January 1, 1943. It is estimated that this change resulted in the planting of some 3,000 acres of food crops. In addition, Hawaiian sugar planters were required to apply not less than 100 pounds of plant food per acre of sugarcane land. Because of the difficulty they were experiencing in obtaining this fertilizer as a result of the war, the former plant-food requirement per acre of the greater quantity of 100 pounds, or 60 percent of the average application in 1940 or 1941 (whichever was smaller), was revised so as to eliminate the second alternative.

The farming practices for the continental beet area in 1943 were, with the exception of California, the same as in 1942, and the same was true in the mainland cane area. The changes made in the farming-practice requirement for California were effected to meet local conditions.

FOOD ORDERS ON SUGAR AND MOLASSES

In January 1943 administration of raw-sugar conservation and distribution was transferred from the War Production Board to the Food Distribution Administration. The first of these orders, FDO No. 7, which controls the distribution of raw sugar, superseded WPB's General Preference Order M-98, issued in February 1942. Under FDO No. 7, purchases, importations, or acceptances of deliveries of raw sugar are limited to refiners and to governmental agencies. The second of the orders, FDO No. 7.1, superseding WPB's supplementary Order No. M-98-a, establishes raw-sugar allotments for refiners in the United States and provides that refiners may not purchase, import, or accept deliveries of raw sugar in excess of allotments which may be established for them from time to time.

In April 1943 FDO No. 51 was issued, providing for restrictions on deliveries and usage of edible molasses. This order took the place of WPB's General Preference Order M-54 insofar as it applied to edible molasses. Under the order, deliveries of edible molasses from primary sources, such as cane-sugar refiners, the raw-sugar mills of Louisiana, and the sirup mills of the South, are limited to persons engaged in blending or packaging the product and to certain food manufacturers who used edible molasses during the year ended June 30, 1941, unless special authorization is granted by the Director of Food Distribution. This order does not restrict the operations of distributors who purchase for resale. Persons authorized to accept deliveries are limited in both receipts and usage of edible molasses to the quantities used by them during the year ended June 30, 1941.

In May 1943, Food Directive No. 8 was issued, delegating to the Office of Price Administration the authority to ration sugar used in the manufacture of imported products or in the manufacture of any ingredient of such products. This authority was requested by the OPA to plug up some loopholes in the sugar-rationing program. Some manufacturers were in position to supplement their ration through the importation of flavoring sirups containing a high percentage of sugar.

MINIMUM WAGES IN DOMESTIC AREAS INCREASED

The minimum wages for field laborers were increased during 1943 in all the domestic sugar-producing areas to give effect to the ratio of income distribution between grower and laborer which prevailed during the pre-war period. In the sugar-beet area, 1943 field wages were increased about \$6.60 per acre. Wage rates for nonharvesting operations in the mainland sugarcane area of Louisiana and Florida for the calendar year 1943 were increased by about 16 percent above the wages established for 1942. Minimum harvesting wage rates established for the 1942 Louisiana crop were about 12 percent higher than those for the 1941 crop, and those for Florida were between 8 and 12 percent higher.

In Puerto Rico, basic wages were lifted 20 cents per 8-hour day for nonharvesting operations during the period July 1 to December 31, 1943. In the first part of the year growers were paying wages approximately 13 percent higher than were required in 1942 and consequently no additional increase was made for this period.

An increase in the basic wage rates for field workers in Hawaii was made possible through the relaxing of martial law which was in effect in 1942. However, since there had been a voluntary increase of 10 percent in wages over those required in 1942, no further increase was made for the first half of 1943. The minimum wages for workers per pay period were adjusted upward by 15 percent over the previously existing level for all work performed during the last 6 months, and in addition to the higher basic wages the bonus rate based on sugar prices was increased.

PRIORITY AID TO DOMESTIC SUGAR INDUSTRY

During the fiscal year, the sugar industry in continental United States, Hawaii, and Puerto Rico was helped in obtaining critical materials for maintenance and repair of plants, special machinery, and other equipment, together with replacement parts, and for containers, in order to maintain maximum sugar production and efficient distribution. Under this program the needs of the sugar industry by quarterly periods for a year ahead are programmed, justified, and the allocations requested.

FAIR-PRICE DETERMINATIONS ISSUED

Fair-price determinations issued during the year covered the 1942 sugarcane crops in Louisiana and Florida, the 1942 and 1943 crops in the continental beet area, the 1942-43 Puerto Rican sugarcane crop, and the 1942 Virgin Islands sugarcane crop. These determinations estab-

lish the prices which producers, who are also processors, must pay for cane or beets bought by them from other growers in order to qualify for payments under the sugar program. The Puerto Rican determination was modified by omission of the molasses bonus previously provided for and a slight broadening of the expenses deductible in calculating the mill value of raw sugar. At the same time the 1943 fair-price determination for the beet-sugar-producing area provided in effect that the grower receive the first 50 cents per hundred-weight of sugar above the level of proceeds of the previous year, since the Government recoups the support payment, all of which accrues to the grower, before sharing between processor and producer is resumed.

TABLE 22.—*Conditional gross payments to sugar producers, under the Sugar Act of 1937, 1942 program¹*

| Sugar-beet States: | Dollars | Sugar-beet States—Continued. | Dollars |
|--------------------|-----------|------------------------------|------------|
| California | 6,318,124 | Wisconsin | 423,415 |
| Colorado | 5,468,482 | Wyoming | 1,230,913 |
| Idaho | 2,861,035 | | |
| Illinois | 81,248 | Total | 29,813,168 |
| Indiana | 237,778 | | |
| Iowa | 103,411 | Sugarcane States: | |
| Kansas | 176,251 | Florida | 709,392 |
| Michigan | 2,780,746 | Louisiana | 6,200,000 |
| Minnesota | 870,059 | | |
| Montana | 2,487,706 | Total | 6,909,392 |
| Nebraska | 2,242,916 | | |
| New Mexico | 6,538 | Sugarcane insular region: | |
| North Dakota | 422,001 | Hawaii | 8,147,494 |
| Ohio | 1,290,648 | Puerto Rico ² | 13,020,000 |
| Oregon | 511,134 | Virgin Islands | 26,000 |
| South Dakota | 187,365 | | |
| Texas | 4,412 | Total | 21,193,494 |
| Utah | 1,452,849 | | |
| Washington | 656,137 | Grand total | 57,916,054 |

¹ Includes acreage-abandonment and crop-deficiency payments.

² Estimated.

MISCELLANEOUS PRODUCTS

A number of complex marketing problems cropped up during the year in connection with such miscellaneous foodstuffs as spices, tea, coffee, and cocoa beans. These commodities are produced outside the country and the shortage of ocean shipping space hampered their importation. Some difficulties also were experienced with domestically produced items such as honey, beeswax, distilled spirits, wine, beer, soft drinks, fish, and vitamins.

SPICES

Spice supplies during the year were augmented by the inclusion of four major types—pimento (allspice), cinnamon, nutmeg, and mace, in the world allocation system, a program of the Combined Food Board. Through the Board's Committee on Spices, Cocoa, and Coffee an allocation of a quantity of each of these spices was made available for United States importation. By informal agreement of the committee with the British Ministry of Food, the entire production of the ginger crop in Jamaica (with the exception of a small quantity allocated for the United Kingdom and Canada) also was made available to the United States. The quantities allotted represented from 20 to 100 percent of the normal consumption of these spices.

TABLE 23.—*Spices: Consumption, stocks, imports, fiscal year 1943*

| Spice | Normal annual consumption | Stock July 1, 1942 ¹ | Imports July 1, 1942, to June 30, 1943 ² | Total | Stock June 30, 1943 ^{1,3} | Shrinkage |
|-------------------------------|-----------------------------|---------------------------------|---|-----------------------------|------------------------------------|-----------------------------|
| Pepper (black and white)..... | <i>Pounds</i> 30,000,000 | <i>Pounds</i> 91,158,316 | <i>Pounds</i> 27,303 | <i>Pounds</i> 91,185,619 | <i>Pounds</i> 50,456,402 | <i>Pounds</i> 40,729,217 |
| Cinnamon..... | 10,500,000 | 9,876,550 | 1,787,682 | 11,664,232 | 5,379,444 | 6,284,788 |
| Cloves..... | 7,000,000 | 7,864,280 | 3,647,976 | 11,512,256 | 7,657,113 | 3,855,143 |
| Ginger..... | 3,000,000 | 5,165,097 | 2,866,981 | 8,032,078 | 3,912,218 | 4,119,860 |
| Mace..... | 850,000 | 944,233 | 161,887 | 1,106,120 | 521,217 | 584,903 |
| Nutmeg..... | 4,500,000 | 4,479,043 | 1,725,017 | 6,204,060 | 1,833,000 | 4,371,060 |
| Pimento (allspice)..... | 1,800,000 | 1,151,027 | 1,327,327 | 2,478,354 | 1,040,915 | 1,437,439 |

¹ Figures from Bureau of Census quarterly reports.² Of the total imports 755,951 pounds were used for lend-lease purposes.³ Preliminary.

Stocks of spices in more critical supply have been conserved to some extent by substitutions in the trade. This applies particularly to various food manufacturers who have adjusted their formulas by curtailing the use of the more critical items, and also by substitution with spices in more plentiful supply. Although red pepper, paprika, and mustard seed are the only spices that have been produced in this country to any extent heretofore, a number of other items such as sage, caraway, poppy, and coriander are now being produced in increasing quantities. A number of items also are available from Mexico and other Latin American countries not formerly producing in commercial quantities.

The present status of spice supplies is shown in table 23. Pepper is the most critical, as we are entirely dependent upon stocks, with no expectation of importations. Supply of unrestricted spices is generally fair.

Equitable distribution of the leading spices has been regulated by FDO No. 19, which became effective February 8, 1943. This order superseded WPB Conservation Order M-127, originally effective May 8, 1942.

Substitutes have been developed by packers and distillers for various spices in short supply. A synthetic product, developed for cinnamon, has a satisfactory flavor and odor and very closely approaches the types of Cassia formerly available. Imitations of most of the other leading spices which are more or less satisfactory and most of which require varying proportions of the true product also have been developed. In addition, the distillers are producing substitutes, imitations, and various combinations of oil which may be used as such or blended with a base and distributed in dry form. Such products are used primarily by the manufacturing trade.

TEA

In February 1943, tea purchased by the Commodity Credit Corporation began to arrive, and a system of distribution from stock pile to industry was required. On February 15, 1943, the Secretary of Agriculture issued FDO No. 21. This is the framework under which 14 qualified distributors (former tea importers) distribute from stock pile to packers all teas available for civilians. Normal channels of distribution have been utilized to the greatest possible extent and

comparatively little dislocation in pre-war methods of operation have resulted.

Tea is not rationed, and there is little likelihood that this will ever be necessary.

At the beginning of the fiscal year, stocks of tea totaled about 38 million pounds. The effectiveness of FDO No. 21 is demonstrated by the fact that, without rationing, stocks at the end of the fiscal year had not been reduced.

COFFEE

Coffee supplies on July 1, 1942, totaled about 490 million pounds. But these supplies gradually dwindled during the last 6 months of 1942, even with conservation measures in effect. For that reason, coffee was rationed in November 1942. The ration at first was placed at 65 percent of 1941 consumption, but later, because of the shipping situation, it was lowered to about 57 percent of the 1941 consumption. Because of the lowering of the value of the ration coupon and increased arrivals in this country, the supply practically doubled between December 1, 1942, and June 30, 1943.

COCOA BEANS

Stocks of cocoa beans as of July 1, 1942, were 363 million pounds. This was approximately 9 months' supply on the basis of Conservation Order No. M-145, effective at the time. The United States was particularly fortunate in having had this inventory, a result of pre-Pearl Harbor purchases, and of a commodity unrestricted by national or international regulation.

During the 1943 fiscal year, restrictions on the use of cocoa beans were in effect to the extent of 60 percent of 1941 usage, plus additional quantities for ex-quota requirements. This country therefore had to depend to a large degree on the inventory acquired before the war. Recently, however, arrivals have begun at least to equal present disappearance, and the supply on hand at the end of the fiscal year was 240 million pounds, or about a 6 months' inventory.

FDO No. 25, which replaces Conservation Order M-145, requires an equitable distribution of cocoa beans among customers. With the cooperation of the industry, this plan has worked extremely well. The food order has set up unofficial quotas for customers, on the basis of the customers' 1941 purchases, and it is generally believed that there are no 1941 buyers of cocoa products who are not now receiving their fair share of current production and supplies.

HONEY

Supplies of domestically produced honey were extremely light at the beginning of the 1943 fiscal year. Most beekeepers had sold out completely and few packers had enough honey to take care of all orders up to the time new honey became available. Bakers and other industrial users were often buying from hand to mouth, and in the East, at least, were largely supplied by imported honey, which was available at the time in greater volume than previously.

The 1942 domestic honey crop was 40 million pounds lighter than the 1941 crop, and though 27 million pounds of imported honey came

in during the fiscal year 1943, the distribution of honey could not have been handled to the best interests of consumers had it not been for the honey limitation order. This order, requested by the industry itself and issued on March 26, 1942, as M-118 by the War Production Board, was later transferred to the FDA as FDO No. 47, effective April 6, 1943. FDO No. 47 restricted the amount of honey that manufacturers could use, but placed no limitation on the amount going to consumers direct or through honey packers.

Under the order, manufacturers are allowed 120 percent of their use during the corresponding months of 1941. As a result of a provision authorizing special quotas of honey for manufacturers having new formulas that include honey, it is expected that considerable additional honey will be sold for use in these new products. Rationing of honey has not been given serious consideration. It is believed that any necessary rationing can be done by packers and beekeepers in allocating their available stocks.

Because of the scarcity of honey, bakers and other manufacturers have used invert sirups containing a mixture of honey, molasses, and corn sirup. As a result, some honey dealers fear that former customers may have been permanently weaned away from honey. No commercial attempts have been reported, however, to produce "Kunsthonig"—an artificial honey that is very popular in several European countries.

Aid has been given the industry in obtaining an unlimited use of 60-pound tin cans for packing honey; in obtaining from the OPA sugar for feeding bees; in obtaining an unlimited quota of hives and an increased quota of other bee supplies from the War Production Board; and in placing honey on the list of essential farm products, producers of which are eligible for the Selective Service II-C grouping.

Under the stimulation afforded by the ex-quota provision of FDO No. 47, a considerable number of new products containing honey, or products involving the use of new formulas including honey, have been developed. Among these are honey ice cream (with greater sweetness because of lower freezing temperatures); frozen baked beans; canned red kidney beans; graham crackers; honeybutter (a very smooth mixture of dairy butter and honey) and honey fruit punch.

BEESWAX

Demand for beeswax in products used by the armed forces is steadily increasing. Beeswax is utilized as a coating to protect and lubricate shells; to protect fighting planes; to waterproof canvas (beeswax does not mold); in adhesive tape used to seal shell cases; in medicines and ointments; and in cosmetics for the WAVES and WACS and SPARS.

Various amorphous waxes are being used to some extent as substitutes for beeswax in cosmetics and other civilian products. Satisfactory partial substitution of mineral wax for beeswax was even found feasible in making honeycomb foundation, although it is hoped that this will not become a commercial practice. For use in polishes, carnauba wax could be substituted for beeswax, but it is much higher in price.

Aid has been given to the industry in obtaining from the WPB an unlimited quota of beehives and an increased quota of comb foundation and other supplies and in obtaining from the OPA sugar for

feeding bees. Strong colonies and adequate hive equipment are preliminary essentials in obtaining a maximum output of beeswax.

Due to the keen demand for beeswax, supplies were short throughout the fiscal year. It was in part compensated for by a reduction in the output of cosmetics, the leading use for beeswax. Also, voluntary cooperation on the part of the Catholic Church in conserving beeswax candles in church services has aided conservation.

FISH

All fish and shellfish in hermetically sealed containers were rationed on March 28, 1943, under Ration Order No. 16. Effective June 6, 1943, this order was amended to discontinue some of the canned fish items, with the exception of the more important species, which make up about 92 percent of canned-fish production. This amendment was brought about after careful consideration had been given the movement of these luxury items from grocery-store shelves and the many letters of protest from the industry. The FDA was in close touch with OPA in making these determinations.

The total canned fish supply of the 5 more important varieties—mackerel, salmon, sardines, shrimp, and tuna-like species—at the producer and distributor levels on January 1, 1942, was 6,522,000 cases, while on January 1, 1943, the supply at the same levels had dropped to 3,817,000 cases. March 1, 1943, saw another sharp decline in the total supply to 2,640,000 cases, thus indicating that rationing was absolutely necessary.

VITAMINS

The development of substitutes for synthetic vitamins has been hampered by the lack of raw materials and manufacturing facilities. The chief substitutes now under study are for the B-complex vitamins, represented by food yeast and liver concentrates. Two privately financed projects on the production of vitamin concentrates from agricultural materials are under study by the FDA.

Present production of vitamins is sufficient to meet present requirements but production will have to be increased to meet requirements of the coming fiscal year. It is now estimated that 2,076,520 pounds of synthetic vitamins will be produced in 1943-44 compared with 1,094,322 pounds in 1942-43.

Chemical formulas used by the industry in the synthesis of vitamins have undergone numerous changes affording a better yield, and eliminating some steps in the process, thus increasing the production rate. The industry is making every effort to reduce the amount of critical materials used in the processing of vitamins and has been able to eliminate the use of a number of critical materials in short supply.

DISTILLED SPIRITS

All beverage production of distilled spirits other than from fruit ceased on October 8, 1942. And it has not been possible to add to this supply with the exception of fruit brandy, gin, and rum imports from Mexico, Cuba, Puerto Rico, and other Caribbean sources. Total imports are nominal in quantity and are not sufficient to compensate for the cessation of domestic distillation. This is indicated by preliminary

figures on stocks. There were 439,519,392 tax gallons of distilled spirits in stock on June 30, 1943, which is a reduction of 101,668,926 tax gallons since July 1, 1942.

Distribution in amounts which producers feel they can supply has not been curtailed, but the bottle-limitation Order No. L-103, with amendments, restricts the use of glass to 65 percent of the amount used in the months July, August, September, and October 1942, or 65 percent of the total 1942 usage (this is optional). Cardboard shipping cases undoubtedly will cause more hindrance to distribution than any other one factor.

WINE

FDO No. 17 restricts the purchase, delivery, and use of raisin-variety grapes in certain localities for any purpose other than for conversion into raisins. FDO No. 69 restricts the use of practically all fruits and berries other than grapes for conversion into an alcoholic product for sale except where:

1. Such fruit is otherwise unsuitable for human consumption.
2. No market is available for such fruit for human consumption except when converted into an alcoholic product.
3. The owner of such fruit has exercised all reasonable efforts to dispose or utilize it for human consumption.
4. Granting of permission to use the fruit for alcoholic products is in accordance with such additional considerations as may be specified by the War Food Administrator.

There has been little if any expansion in the wine industry during the current year. The FDA has consistently denied priority assistance for expansion of beverage production or bottling facilities for the reason that sufficient facilities already exist. The substantial reduction in bulk shipments of wine resulting from the conversion to more essential uses of wine tank cars may necessitate some assistance in obtaining bottling equipment for California wineries.

Considerable priority assistance has been given, however, for the maintenance and repair of facilities. A representative and active Wine Industry Advisory Committee composed of 15 members has been appointed, and has been of considerable assistance in the enactment of Conservation Order No. L-103 and subsequent amendments, which provides for a limited number and standard shapes and sizes of wine bottles; M-104, restricting the use of metal caps for wine bottles; in the conversion of the large single unit wine tank cars, and in the formation of a plan for the allocation and use of the multiple-unit wine tank cars, which up to the present time remain available for bulk wine transportation.

BEER

Due to the shortage of malted grains that developed in February 1943, Conservation Order No. M-288 was issued and restricted the use of such grains by the brewing industry. (This order was later superseded by FDO No. 88.) Since malted grain is the principal component of beer, constituting 70 percent of the raw materials used in its manufacture, the curtailment on the use of malted grains has resulted in limiting beer production from what it otherwise would have been.

Beer production since March 1, 1943, however, has been approximately 8 percent greater than in the same period of 1942. The

increased volume of production has been effected notwithstanding restrictions upon malt usage through reducing the strength of beer and through substituting for malted grain other materials, such as corn, rice, and unmalted barley.

The brewing industry is threatened with curtailed corn supplies, which will probably result in the decreased production of beer. Corn is the second most important ingredient in beer, constituting an average of about 20 percent of the raw material normally entering into beer manufacture.

Production capacity of the brewing industry on July 1, 1942, was about 81 million barrels per year, but the actual production was at the rate of 67 million barrels. The industry has not been undergoing any expansion—on the contrary, numerous plants have discontinued operations. Liaison with the brewing industry is maintained through an industry advisory committee.

FDO No. 66, which limits the amount of malt used by individual brewers, contains a provision prohibiting any brewer from using more than 85 percent of his malted grain quota for the manufacture of beer containing in excess of 3.2 percent of alcohol by weight. Beer of low alcoholic content is set aside for use by the armed forces.

SOFT DRINKS

The supply status of soft drinks on July 1, 1942, was primarily controlled by the sugar-rationing program which provided 70 percent of the 1941 use. The crown cap order, M-104, became operative about the same time and provided for 70 percent of 1941 use. Taking into consideration exempt-quota production, it is estimated that supplies of soft drinks on June 30, 1943, were from 80 to 85 percent of 1941.

GRAIN PRODUCTS

Major activities carried on during the year in the field of grain products and similar commodities included administration of three food orders—FDO No. 1 (bakery products), FDO No. 10 (rice), and FDO No. 45 (beans and peas); work in connection with expanding United States production of soya products; and purchase and distribution of seeds. Marketing service work, as in past years, included inspection of grain, hay, beans, peas, and other products; market news, and administration of the Federal Seed Act.

FDO NO. 1—BAKERY PRODUCTS

In the fall of 1942 the Office of Economic Stabilization, with the cooperation of the Office of Price Administration and the Federal Trade Commission, made a study of wheat, flour, and bread price control. It was decided to maintain bread prices at prevailing levels in the face of higher flour prices. To enable bakers to meet the increased cost of flour and a generally higher level of operating expenses, without increasing the price of bread, FDO No. 1 was issued and became effective January 18, 1943.

The most significant provision of the order prohibited consignment selling of bread. It also placed restrictions on the number of varieties that could be made by any baker. It lowered the amount of shortening, sugar, and milk that had been used by many bakers, but still provided for the baking of a wholesome loaf of bread. It required the

enrichment by bakers of all white bread. It prohibited the slicing of bread by bakers.

The prohibition against consignment selling provides economies for the wholesale baker and at the same time conserves much critical material. Consignment selling at one time was one of the most wasteful practices of the baking industry; the stale returns were sold for food in many cases but vast amounts also were used for animal feed or otherwise disposed of. A thorough investigation revealed that in 1942 approximately 4.5 million pounds of shortening, 5.5 million pounds of dry milk, and 6.0 million pounds of sugar were used in bread that was returned as stale and not resold for human consumption.

The order as originally issued prohibited only the consignment selling of bread and rolls. After further study, and taking into consideration opinions expressed by bakers all over the country, it was concluded that other bakery products also should be prohibited from sale on a consignment basis. The order was so amended on January 25, placing the same prohibition on all bakery products. The order was further amended on June 17 to make grocers and other distributors equally liable with the baker for any violation of the provision prohibiting the return of any bakery products.

Originally the order permitted the use of not less than 3 nor more than 4 parts of milk to 100 parts of flour, and not more than 2 parts of shortening and 4 parts of sugar. As amended, effective July 1, 1943, the minimum established for the use of milk was removed because of the inability of bakers in many cases to obtain a sufficient amount to meet this requirement, and a maximum of 4 parts to 100 parts of flour was established. In view of the increased availability of sugar and shortening the permissible amount of use of these ingredients was increased to 6 parts of sugar and 3 parts of shortening to 100 parts of flour.

The provision prohibiting the slicing of bread, which appeared in the original order, would have saved some money for all bakers and would also have conserved waxed paper. But public opinion was too strong against the provision, and that part of the order was rescinded in March 1943.

FDO No. 1 was issued as part of the program to prevent wasteful practices and to provide an adequate supply of bread and other bakery products, to meet war and civilian needs, and to enable bakers to meet the higher costs confronting them without increasing the price of bread. It is generally agreed that these objectives have been attained without imposing undue hardship upon the baking industry.

FDO NO. 10—RICE

Despite the fact that the 1942 rice crop in the United States was the largest of record, supplies of the grain available to the United Nations were drastically reduced by Japanese occupation of the important rice-producing countries of Burma and Indo-China. As a result, Hawaii, Puerto Rico, Cuba, and other Caribbean areas have had to depend on the United States for supplies of this grain, which plays such an important part in their daily diets.

To assure adequate supplies in the territories and other vital defense zones, FDO No. 10 was issued on January 22, 1943. It directed rice millers to set aside 60 percent of their stocks of milled rice on

hand and the quantities that might be milled subsequently for purchase by the Government.

FDO NO. 45—BEANS AND PEAS

FDO No. 45, effective April 1, 1943, reserved 55 percent of the supplies of dry edible beans and 60 percent of dry peas and split peas, of certain classes, in the hands of "processors" or "first owners." Purpose of this order was to assure necessary supplies for military and allied needs.

The order was amended, to become effective July 1, 1943, so that set-aside provisions for classes of dry edible beans and peas will apply only when they are delivered into direct channels of consumption.

SOYA PRODUCTS

At 30 cents a pound for meat, the cost of meat protein figures out at about \$2 a pound. When milk retails at 15 cents a quart, the cost of milk protein also comes to \$2 a pound. When soya flour retails at 35 cents a pound, the cost of the soya protein is only 70 cents a pound. The high protein content of soya flour and the relatively low cost of such protein is one of the important factors behind the FDA's drive for increased production.

At the end of the 1943 fiscal year, production capacity for edible soya products was expected to reach $1\frac{1}{2}$ billion pounds annually by December 1943. Launched by the FDA in December 1942, the expansion program is expected to supply adequate quantities of soya products—chiefly flour, grits, and flakes—to meet all requirements, including the anticipated heavy post-war needs.

Soya products already have played a significant wartime role. Rich in valuable protein, minerals, and vitamins, they are readily adaptable to large-scale use as a human food to supplement meat, milk, and eggs. Large quantities have been used in the military diets of the allies for fortifying cereal foods, meats, and other products.

Most of the soya products used domestically have been utilized by food manufacturers for fortifying or extending various cereal and meat products. Increasing amounts will be available for this purpose as well as for direct use in the home. Special committees in the Department of Agriculture are developing a program for the utilization of soya products—both in kitchen recipes and in prepared foodstuffs—so as to take full advantage of this important protein food in the American diet.

SEEDS

Very soon after the outbreak of the war in Europe, it became apparent that domestic production of seeds must be increased. Some of our best seed came from France and Germany; our cabbage seed from Denmark and Holland; onion seed from the Canary Islands; crimson clover from France; white clover from Hungary.

As soon as the import situation began to tighten, growers expanded production in California, in the Puget Sound area of Washington, and in other producing sections. They increased acreage, not only of the types that had long been grown in this country, but of the varieties or types that had seldom, if ever, been grown here.

At the same time we were cut off from seed sources in continental Europe, so were the British. The British had always depended on

imports from the continent. Moreover, seed needs of the United Kingdom mounted as the British turned long untilled acres to food production. Part of our production had to go to supply British needs.

With the entry of the United States into the war and the movement of our troops to Australia, that country suddenly realized that it lacked fresh vegetables to feed the Americans. Australians do not depend on vegetables to the extent that we do. Requests from "down under" poured in. And those requests were met from our expanded output.

The Soviet Union normally depends on the Ukraine farmlands as a source of seed. Supplies were short when the Nazis moved in. The farmers from that area trekked with their implements north and east, some to the unbroken grasslands in Siberia. They needed hardy seed varieties. Our Minnesota 13 corn, with roughly a 3-month season, along with our Early improved Golden Glow and Improved Leaming, came to the rescue. Our soybean varieties, with a similar length of season, helped to fill in gaps, and our bromegrass seed was in keen demand. Russia also has demand for large shipments of northern-grown alfalfa seed—more than we can send.

The seeds that have gone to North Africa have played a very large part in putting that country back on a self-sustaining basis. It seemed likely, at the end of the fiscal year, that North Africa would be furnishing food to other liberated areas and to the allies, rather than continuing to be a drain on our own food supplies.

INSPECTION

During the year, 1,919,724 certificates were issued by licensed grain inspectors and 55,393 appeals were acted upon by the FDA. There was a large increase in the total number of inspections but a material decrease in the number of appeals. At the close of the year there were 412 licensed grain inspectors, located at 203 inspection points in 32 States.

The increased production of rice, together with larger purchases for the Government, resulted in a sharp increase in the number of lot inspections. More than 7 million bags of 100 pounds each were graded during the year, as against 3,500,000 for the preceding year. The inspection service was extended to cover purchases made in the Dominican Republic in connection with the procurement program.

A total of 16,000 hay inspection certificates, covering 287,000 tons of hay and straw, were issued during the year, compared with 12,655 certificates and 179,877 tons for the preceding year.

Bean inspection likewise increased by reason of the set-aside order and the lend-lease and other procurement programs. A total of 7,607,000 bags of 100 pounds each were inspected and 12,372 certificates issued. This compares with 5,404,000 bags for the previous year and 10,259 certificates.

More than 7,000,000 bags of peas were inspected during the year, as compared with 2,276,000 bags during the previous year.

The work in connection with the inspection of the various commodities purchased by the FDA doubled during the year, and approximately 24,000 lots of grain products, feeds, seeds, oils, vitamins, and numerous other commodities were inspected and certified. Similar inspections were performed for the Navy and other governmental

agencies. At the request of the War Department the latter part of the year the FDA began the inspection of most of the grain products other than flour purchased by the Army.

It was necessary to curtail greatly the research and testing activities of the FDA, so that only 18,000 tests were made in connection with regular activities. Over 49,000 tests were made in connection with war activities.

THE FEDERAL SEED ACT

Under the Federal Seed Act, 483 complaints were received, which was approximately the same as last year; 315 warnings were issued, and in 64 cases firms or individuals were cited and afforded an opportunity for hearing. During the year 18 seizure actions and 9 criminal actions were completed in the United States district courts. Importations of seed increased during the year, the principal increase being from Canada. A total of 16,841 seed samples was tested in Federal seed laboratories. Seed dockage inspection service was continued and 233 inspection certificates issued. The Seed Verification Service, which verifies the origin of alfalfa and clover seed, was maintained on a basis comparable to that of previous years.

MARKET NEWS

Approximately 1,650 market reviews and summaries were prepared and a million copies of these reports were distributed. Basic market information and price and other statistics pertaining to grain and grain products and hops were furnished to the Bureau of Labor Statistics, Commodity Credit Corporation, Bureau of Agricultural Economics, Federal Crop Insurance Corporation, and several of the cooperative producing and distributing associations. A more effective regional dissemination of market information and an improvement in the type of material and of the service to farmers and feeders were obtained.

THE COMMODITY EXCHANGE ACT

Futures trading in commodities in fairly adequate supply, such as wheat, oats, rye, cotton, and wool tops, continued in sizable volume during the 1943 fiscal year. But in the case of certain commodities, for which demand was extremely heavy—butter, soybeans, corn, and millfeeds—futures trading was materially restricted or suspended.

Futures markets for lard and cottonseed oil, prices of which remained at or near ceiling levels throughout the year, displayed signs of revival after the close of the year as prices receded below ceiling levels. In these, as in some other commodities, the favorable progress of allied arms during the spring and summer of 1943 was a factor in reviving interest in futures contracts as a means of protection against price recessions below ceiling levels.

Although open contracts in fats and oils and feed commodities dropped to nominal levels or were closed out entirely during the year, those in cotton, wool tops, and most grains continued at an annual average not greatly changed from the previous year.

Summaries of futures trading and open contracts are shown in tables 24 and 25.

TABLE 24.—*Volume and estimated dollar value of futures trading, by commodities, fiscal years 1941, 1942, and 1943*

| Commodity | Unit | Volume of futures trading | | | Estimated value of futures trading | | |
|-----------------|------------------|---------------------------|-----------|-----------|------------------------------------|----------------|----------------|
| | | 1941 | 1942 | 1943 | 1941 | 1942 | 1943 |
| Wheat | Thousand bushels | 4,783,860 | 3,831,001 | 2,703,210 | 4,042,362,000 | 4,535,905,000 | 3,670,959,000 |
| Corn | Thousand bushels | 795,829 | 1,235,641 | 1,851,787 | 525,247,000 | 965,036,000 | 788,755,000 |
| Oats | Thousand bushels | 248,479 | 524,029 | 610,552 | 89,204,000 | 257,822,000 | 346,183,000 |
| Rye | Thousand bushels | 266,248 | 790,011 | 1,469,683 | 135,254,000 | 534,047,000 | 1,066,990,000 |
| Barley | Thousand bushels | 2,820 | 5,587 | 3,124 | 1,402,000 | 3,883,000 | 2,455,000 |
| Flaxseed | Thousand bushels | 29,606 | 42,013 | 28,533 | 49,975,000 | 92,431,000 | 78,637,000 |
| Soybeans | Thousand bushels | 611,447 | 681,656 | 216,000 | 615,116,000 | 1,179,265,000 | 27,810,000 |
| Cotton | Thousand bales | 34,258 | 64,903 | 42,738 | 1,810,530,000 | 5,838,052,000 | 4,278,084,000 |
| Wool tops | Thousand pounds | 122,805 | 50,990 | 33,820 | 146,506,000 | 65,114,000 | 42,444,000 |
| Butter | Carlots | 21,556 | 26,467 | 37,102 | 127,929,000 | 180,501,000 | 59,539,000 |
| Eggs | Carlots | 46,903 | 41,975 | 9,005 | 114,593,000 | 152,420,000 | 42,594,000 |
| Potatoes | Carlots | 250 | 10,539 | 44,237 | 153,000 | 10,092,000 | 5,083,000 |
| Millseeds | Tons | 668,150 | 809,450 | 336,370 | 12,327,000 | 24,243,000 | 11,201,000 |
| Cottonseed oil | Thousand pounds | 3,319,170 | 1,286,370 | 31,260 | 233,670,000 | 171,087,000 | 4,345,000 |
| Cottonseed meal | Tons | 577,290 | 860,400 | 88,500 | 15,123,000 | 31,190,000 | 3,319,000 |
| Soybean meal | Tons | 361,200 | 623,100 | 621,600 | 9,882,000 | 25,229,000 | 912,000 |
| Lard | Thousand pounds | 2,420,700 | 1,838,000 | 65,350 | 153,230,000 | 205,856,000 | 706,000 |
| Tallow | Thousand pounds | 3,600 | (7) | 4,800 | 185,000 | 302,000 | |
| Soybean oil | Total | | | | | | |
| | | | | | 8,082,990,000 | 14,272,173,000 | 10,430,096,000 |

¹ Trading suspended beginning June 26, 1943.² Trading suspended Feb. 19, 1943.³ No trading since Jan. 29, 1943.⁴ No trading between Mar. 30, 1943, and July 6, 1943.⁵ No trading since Jan. 14, 1943.⁶ No trading between Nov. 24, 1942, and Aug. 3, 1943.⁷ Trading discontinued June 5, 1941.

TABLE 25.—*Annual average of open contracts on all contract markets, by commodities, 1938-39 to 1942-43*[Average of open contracts at end of each month¹]

| Commodity | Unit | 1938-39 | 1939-40 | 1940-41 | 1941-42 | 1942-43 |
|-----------------|------------------|------------------|------------------|--------------------|---------|---------|
| Wheat | Million bushels | 124.2 | 120.4 | 79.2 | 71.4 | 67.2 |
| Corn | Million bushels | 56.9 | 39.7 | 24.1 | 53.6 | 42.7 |
| Oats | Million bushels | 15.9 | 16.0 | 11.9 | 15.7 | 19.4 |
| Rye | Million bushels | 8.4 | 15.3 | 17.1 | 25.2 | 39.1 |
| Barley | Million bushels | .7 | .6 | .2 | .2 | .2 |
| Flaxseed | Million bushels | .6 | 1.2 | 1.6 | 2.1 | 1.2 |
| Soybeans | Million bushels | | | ² 10.2 | 7.9 | .8 |
| Cotton | Million bales | 2.4 | 2.0 | 1.4 | 2.1 | 1.8 |
| Wool tops | Million pounds | ³ 6.7 | 10.9 | 7.4 | 4.1 | 3.5 |
| Butter | Thousand carlots | .6 | 1.0 | 1.0 | 1.7 | .4 |
| Eggs | Thousand carlots | 2.5 | 2.2 | 1.8 | 2.0 | .6 |
| Potatoes | Thousand carlots | (⁴) | (⁴) | (⁴) | .6 | .4 |
| Bran | Thousand tons | 20.3 | 21.5 | 27.9 | 36.6 | 18.0 |
| Shorts | Thousand tons | 5.9 | 4.8 | 10.8 | 11.9 | 4.6 |
| Middlings | Thousand tons | 1.0 | 3.4 | 2.2 | 1.4 | 2.0 |
| Cottonseed meal | Thousand tons | | | ⁵ 26.8 | 44.9 | 7.0 |
| Soybean meal | Thousand tons | | | ⁵ 46.9 | 30.2 | 2.0 |
| Cottonseed oil | Million pounds | | | ⁵ 165.2 | 65.4 | 3.0 |
| Lard | Million pounds | | | ⁵ 146.6 | 87.6 | .6 |

¹ In computing annual averages of month-end open contracts, yearly totals of these figures were divided by 12 although in some markets there were no contracts open at the end of 1 or more months. An exception was made for commodities which came under regulations during a fiscal year. In such cases, averages were computed on the basis of the number of months during which reporting requirements were in effect.

² Open-contract figures not available prior to Dec. 9, 1940.

³ Open-contract figures not available prior to July 31, 1938.

⁴ Less than 100 carlots.

⁵ Open-contract figures not available prior to Mar. 17, 1941.

TRADING UNDER PRICE CEILINGS

Although prices of wheat, oats, rye, cotton, wool tops, and one or two other commodities remained below actual or prospective ceiling levels during the year, and trading proceeded along customary lines, the behavior of other commodities varied widely during the year, depending largely on the excess of demand over supply, and the proximity of prices to ceiling levels.

Trading in corn futures was at a faster pace than usual during the first half of the fiscal year. In January 1943, however, when price ceilings were placed on corn, futures trading in the commodity declined rapidly. When price ceilings were initiated the open interest totaled more than 45 million bushels, and as cash corn supplies in the markets dwindled, the problem of liquidating the open interest presented progressively increasing difficulties. By June 1943, corn supplies in commercial channels had become so short that the FDA requisitioned all stocks in the principal terminal-market elevators. Since virtually no free supply remained for the settlement of futures contracts, all trading in corn futures was discontinued by the various exchanges on June 25 at the request of the War Food Administrator. The outstanding contracts were settled at prevailing ceiling prices for the cash commodity.

Trading in soybean futures declined to a low level under the influence of the ceiling on soybean-oil prices, and was finally suspended by the exchanges on February 19, 1943, following the issuance of an order by the Secretary of Agriculture forbidding delivery of soybeans except to processors, manufacturers, and seed dealers.

Futures transactions in barley continued in moderate volume during the year at prices below prospective ceiling levels. Trading in flaxseed futures continued within the narrow margin between the Government support price and the ceiling price.

In butter, futures trading diminished as demand mounted and prices went to ceiling levels in the fall and winter of 1942-43. After January 29, 1943, no further trades were recorded for the remainder of the 1943 fiscal year. On May 20, 1943, the Board of Governors of the Chicago Mercantile Exchange, in recognition of the difficulties of futures trading in eggs because of the provisions of FDO No. 40 (requiring eggs in storage to be held for Government requirements), limited egg futures trading to liquidation of open contracts.

Futures trading in millfeeds and in cottonseed meal and soybean meal also virtually ceased by the close of the year owing to scarcity of supplies, restrictions on deliveries, or the fact that prices were at ceiling levels. Intermittent trading in potato futures continued during the year, it varying with price levels and the availability of supplies.

In most commodities subject to price ceilings, as in the case of cottonseed oil and lard, the continuance or resumption of futures trading is dependent in large measure on price trends reflecting the impacts of wartime developments.

GENERAL ENFORCEMENT ACTIVITIES

The routine activities required for the enforcement of the Commodity Exchange Act include the designation of commodity exchanges as contract markets, registration of futures commission merchants and floor brokers, review of exchange rules and regulations, compilation and analysis of reports of futures trading operations, enforcement of speculative limits, examination of the books and records of futures commission merchants and large traders, and investigation and prosecution of violations of the act.

CONTRACT MARKETS AND BROKERS REGISTERED

As in the previous year, 18 contract markets, as designated by the Secretary of Agriculture, were in operation, and trading was conducted in 19 commodities as follows:

| Market: | <i>Regulated commodity</i> |
|---|---|
| Chicago Board of Trade----- | Wheat, corn, oats, rye, barley, soybeans, lard, cotton. |
| Chicago Mercantile Exchange----- | Butter, eggs, potatoes. |
| Chicago Open Board of Trade----- | Wheat, corn, oats, rye, soybeans. |
| Duluth Board of Trade----- | Wheat. |
| Kansas City Board of Trade----- | Wheat, corn, millfeeds (bran, shorts). |
| Los Angeles Grain Exchange----- | Barley. |
| Memphis Merchants Exchange Clearing Association. | Cottonseed meal, soybean meal. |
| Milwaukee Grain and Stock Exchange. | Wheat, corn, oats, rye. |
| Minneapolis Chamber of Com- merce. | Wheat, corn, oats, rye, barley, flaxseed. |
| New Orleans Cotton Exchange----- | Cotton, cottonseed oil. |
| New York Cotton Exchange----- | Cotton. |
| New York Mercantile Exchange----- | Potatoes. |
| New York Produce Exchange----- | Cottonseed oil. |
| Portland Grain Exchange----- | Wheat. |
| St. Louis Merchants' Exchange----- | Millfeeds (bran, shorts, middlings). |
| San Francisco Grain Exchange----- | Barley (no trading in 1942-43). |
| Seattle Grain Exchange----- | Wheat. |
| Wool Associates of the New York Cotton Exchange. | Wool tops. |

The number of futures commission merchants registered with the Secretary of Agriculture during the year was 576, compared with 685 for the preceding year. Floor broker registrants totaled 456, compared with 669. The decline in registrations reflected to some extent the smaller volume of futures business in some commodities under wartime conditions.

As a routine activity, new rules and regulations, proposed or adopted by the various exchanges and submitted to the Government as required by law, were reviewed by the FDA to determine compliance with statutory requirements. During the year the Minneapolis Chamber of Commerce completed a general revision and simplification of its rules, including a number of changes recommended by the Administration.

SURVEILLANCE OF TRADING OPERATIONS

The statistical information needed for continuous check on the operations on the exchanges is provided by the routine and special reports which exchange members, brokers, merchandisers, processors, and other traders are required to submit. An average of more than 1,000 of these are received daily; and the total number tabulated and analyzed during the year aggregated nearly a half million.

The required daily reports of large or "reporting" traders are of particular importance in analyzing market operations and maintaining controls. Any trader who holds or controls a position equal to or in excess of certain levels fixed by regulations of the Secretary of Agriculture is required to make such reports. The reporting requirement in effect during the year on grains, for instance, applied to all futures positions equal to or in excess of 200,000 bushels in one future. The corresponding level for cotton was 5,000 bales. The size and character of all futures positions equal to or in excess of such levels are reported on a daily basis. By subtracting the holdings of the large traders from the total open contracts, the aggregate positions of the small traders are determined.

Analysis of the reports of large traders is also important to maintain controls on the size of speculative trades and positions in grains and cotton. In grain futures transactions, there is a specific limit on the amount of daily trading and the net long or short position of any person. This limit is 2 million bushels in 1 future of any grain, or in all futures combined, on any contract market. Hedging transactions and positions are exempt from such trading and position limits. On 56 occasions during the year individual traders in grain held speculative positions ranging from 90 to 100 percent of the speculative limit, which indicated the continuing need for close Government supervision in preventing excessive speculation or undue concentration of speculative positions in the market.

In cotton futures, the limit on daily trading and net long or short positions is 30,000 bales in any 1 future on 1 market. In 38 instances during the year traders held speculative positions of 90 to 100 percent of the established limit. In this commodity, as in others, continued scrutiny of the operations of traders is necessary if excessive speculation, manipulation, and other market abuses are to be prevented.

SPECIAL SURVEYS OF TRADING

In addition to the routine surveillance of trading, special surveys and investigations may be required in dealing with unusual market situations, particularly in view of conditions arising from wartime developments. Such special survey work during the year included a report on the rye situation in November 1942, the decline in wheat futures contracts in August 1942, the purchases of cash corn in April 1943, and the operations of butter hedgers in December 1942.

Surveys were also made to determine the effect of the Commodity Credit Corporation cotton sales program on futures transactions, and the influence of existing or potential ceiling prices on various markets. There were other special reports on the types of available information on cash grain prices and movements at Chicago, the statistical data available on flour sales, the concentration of holdings of cash corn and futures, market liquidity in wheat and in rye futures, and the relations between butter, cheese, and evaporated and powdered milk prices and production.

IMPROPER TRADE PRACTICES AND VIOLATIONS

In connection with a study of trading practices on the New York Cotton Exchange, a test check was made of the execution of orders for and directly between principals as well as the "stopping of orders" on the opening and closing of the market. The study indicated the need of clarifying amendments to the regulation under the Commodity Exchange Act governing the execution of orders directly between principals, and such amendments accordingly were promulgated by the War Food Administrator, effective June 15, 1943.

Following interviews with members of the Chicago Board of Trade and conferences with a special rules committee of the board, as well as with representatives of the Grain Commission Merchants Association, the exchange made several changes in its regulations, designated as further safeguards against the malpractices of trading against customers' orders and of matching such orders.

The number of specific complaints of violations of the act received during the year was 33, compared with 62 in the previous fiscal year. As in former years, the greater number of the complaints were not substantiated when investigated. Of 4 substantiated cases sent to the Solicitor with recommendations for proceedings under section 6 (b) of the act, 1 was closed due to the death of the respondent. The other 3 were pending at the close of the year.

Of the two criminal cases carried over from the previous year, one was closed upon recommendation of the United States attorney, as the defendant was already serving a sentence in a State penitentiary for an offense similar to that charged in the complaint. The other case is still pending with the Department of Justice.

COTTON

Total supplies during the 1942-43 marketing season were about as large as during the previous season. The 1942-43 supply, including carry-over and production, was estimated on February 27, 1943, to total about 22,966,000 running bales compared with a supply of 22,444,000

bales the year before. At no time during the 1943 fiscal year was the distribution of cotton complicated by serious shortages.

FDA activities relative to the distribution of cotton include standardization; classification for various purposes and the handling of certificated cotton for futures delivery; research and testing; statistics and quality improvement; and utilization and diversion. Many programs affecting cotton from the time it is planted in the field until it is finally manufactured into textiles are included under these broad categories of work.

CLASSIFICATION

Cotton classified by the Food Distribution Administration and by classers licensed by the FDA under the Cotton Standards Act totaled 13,832,094 samples during the 1943 fiscal year, compared with 14,147,286 the previous year. A complete summary of FDA's cotton classing work is shown in table 26.

NEW STANDARDS

In view of the substantial increase in the production of American Egyptian (S×P) cotton and because a considerable proportion of such cotton had fallen within lengths not previously represented by official staple-length types, it was recommended in July 1942 that the Secretary of Agriculture promulgate original representations in physical form of the staple lengths $1\frac{3}{8}$ and $1\frac{1}{16}$ inches for American Egyptian cotton. The order of promulgation was signed on August 7, 1942, and became effective on August 10, 1943.

TABLE 26.—*Classification of cotton*

[Not including samples classed for supervision purposes]

| Item | Samples classified during fiscal year— | | |
|---|--|-------------------|------------------|
| | 1941 | 1942 | 1943 |
| Cotton Futures Act: | | | |
| Original certifications | Number 110,638 | Number 118,571 | Number 36,441 |
| Reviews | 26,480 | 40,500 | 15,203 |
| Cotton Standards Act: public classing service | 91,449 | 147,676 | 349,493 |
| Commodity Credit Corporation: | | | |
| Loan cotton | 2,725,428 | 1,005,224 | 1,228,647 |
| Miscellaneous, sales program, etc | 31,073 | 578,667 | 354,018 |
| Federal Surplus Commodities Corporation (formerly referred to as Purchase Branch, A. M. A.) | 411,708 | 24,980 | 661,244 |
| Federal Penitentiary, Atlanta, Ga | | 25,847 | 26,098 |
| Farm Security Administration | 26,390 | | |
| Act of Apr. 13, 1937 (Smith-Doxey Act) | 1,530,764 | 2,520,083 | 3,567,095 |
| Grade and Staple Statistics Act | 770,153 | 506,277 | 565,637 |
| Total classed by FDA | 5,724,083 | 4,967,825 | 6,803,876 |
| Reported classed by licensed classers under Cotton Standards Act | 5,636,857 | 19,179,461 | 17,028,218 |
| Grand total | 11,360,940 | 14,147,286 | 13,832,094 |

¹ These figures for 1942 and 1943 include ordinary bale-by-bale classing, the classification of samples in assembling cotton into even-running lots, and classifications of cotton previously assembled into even-running lots. Figures for earlier years represented bale-by-bale classifications only.

NET-WEIGHT TRADING

Considerable progress was made during the year in the direction of net-weight trading in cotton. During January 1943, a meeting

of representatives of the New York Cotton Exchange and spokesmen of other interested groups in the industry was held to discuss proposed changes in the cotton futures contract of the Exchange.

Among changes under consideration were:

1. To prohibit the delivery of cotton of the grade of Low Middling.
2. Not more than three contiguous grades and two contiguous staples to be delivered on any one contract.
3. To prohibit the delivery of high-density cotton on contract.
4. To require the use of net weights or a tare allowance of 4.2 percent of the gross weight, and to eliminate patching.
5. To eliminate some of the port delivery points and to provide for interior deliveries.

At the end of the 1943 fiscal year, it seemed likely that the New York Cotton Exchange would modify its contract in such a way as to include some of these changes.

While the new contract at New York was under consideration, the FDA was asked to give consideration to a suggested amendment to the regulations under the Cotton Futures Act, which would provide for the use of commercial differences in value between Middling and other tenderable grades somewhat more closely in line with commercial differences prevailing in the territories where deliveries are made. At the end of the fiscal year, plans were moving forward to give official sanction to the proposed amendment.

COTTONSEED GRADING

On August 15, 1942, the War Production Board issued Directive No. 7 which delegated to the Commodity Credit Corporation "authority over vegetable oil seeds." This directive authorized the CCC to direct the kinds, quantities, and conditions of purchase and sale of any vegetable oil seeds to be received or crushed by a crusher. During August 1942 the CCC held a meeting with the cottonseed crushing industry and presented the "Cottonseed Processor Contract" for the 1942-43 season. The directing of the official grading of cottonseed on the basis of the United States Standard Grades was placed under regulations of the Department of Agriculture governing the handling, sampling, and grading of cottonseed.

During the period from July 1, 1942, through June 30, 1943, a total of 158,811 official certificates of grade were issued. These were estimated to represent more than 4 million tons of cottonseed.

COSTS OF GINNING

A study of costs to growers for ginning and packaging cotton and other services performed by ginners incident to the preparation of cotton for marketing has been brought up to date to include the cotton season 1942-43. These costs are summarized as follows:

Upland cotton, per bale, \$5.95; American Egyptian cotton, per bale, \$12.57; and sea-island cotton, per bale \$12.42.

COTTON MARKETING SPREADS

A preliminary study has been made of the spread between prices received by cotton growers and prices paid by cotton manufacturers. This study covers the period 1937-38 to 1941-42 inclusive. During

this period the total annual average spread between farm prices and mill prices has varied from 164 points or \$8.20 per bale in 1937-38 to 253 points or \$12.65 per bale in 1941-42. The 5-year average was 211 points or \$10.55 per bale.

The total spread between farm and mill represents on the average about 16 percent of the price paid by mills. In other words, during the last 5 years the farmer has received approximately 84 percent of the price paid for cotton by manufacturers and 16 percent has been absorbed in marketing channels. This percentage has varied from a low of 13 percent in 1941-42 to about 20 percent in 1940-41. Although marketing spreads have tended to vary directly with cotton prices, the proportion of mill price represented by the marketing spread has tended to vary inversely with cotton prices.

COTTON VARIETIES IN RELATION TO MARKETING

A study of the extent to which cotton manufacturers are familiar with the fiber properties and manufacturing quality of the leading improved varieties of cotton now grown in the United States indicated that only about 6 percent of these manufacturers actually are acquainted with the characteristics and relative merits of these varieties. Many of the manufacturers buy cotton from specific producing areas but only a relatively few have paid much attention to variety to date. In 1938-39 only about 2 percent of the manufacturers were considering variety in connection with their purchases.

AUTOMATIC SAMPLER

Research in cotton sampling has brought about development of automatic mechanical sampling equipment that will take a sample from a cotton bale during the ginning process. This equipment has proved satisfactory under commercial operating conditions in the Mississippi Delta. It will be further tested in commercial gins in the Southeast and in the irrigated area during the 1943 ginning season. Public service patent No. 2,320,544 has been obtained for this equipment.

COTTON WEIGHTS

Progress has been made in the development of a device for the direct reading of the moisture content of lint cotton. The principle upon which the device is based is the established relationship between moisture content of lint cotton and its resiliency or pressure required to attain a given density.

Wide variations in the moisture content of cotton in various producing areas and between the time the cotton is ginned and the time the bales are opened for manufacture constitute a very significant element of risk in marketing under existing methods of weighing. With practical equipment for determining the moisture content of cotton at the time of ginning, the weight of a bale of cotton could be adjusted to a standard moisture content and that weight used throughout marketing channels. This would not only eliminate risk incident to weight variations attributable to fluctuations in the moisture content of the cotton, but also would reduce marketing costs by making unnecessary the payment of charges for weighing with each change of ownership of the bales.

GINNING STUDIES

Cotton-ginning research and developmental work is conducted in cooperation with the Bureau of Plant Industry, Soils, and Agricultural Engineering, and is centered at the United States Cotton Ginning Laboratory at Stoneville, Miss. The work during the 1943 fiscal year was concentrated primarily on problems involved in producing high-grade cotton, cottonseed, and byproducts needed under war conditions.

The principal activities of the ginning laboratory during the year included: The development and testing of inexpensive drying processes and equipment for conditioning and cleaning cotton at small-volume gins in the Southeastern States; development of a source of heat for driers that requires no scarce materials for construction; testing of an experimental apparatus for drying cottonseed and thus providing means for increasing the supply of planting seed of newly developed varieties of cotton that possess superior spinning quality; completion of the developmental and testing work involved in providing equipment for pneumatically conveying roller-ginned S×P cotton from the gin stands to the press box and improving its grade; processes for eliminating static electricity in roller gin plants; and means for increasing efficiency of roller gins.

Final selection of cotton for the various staple-length types in the Official Cotton Standards is now being made on the basis of fiber-length arrays made in the fiber laboratory. Approximately 500 length-array tests were made during the year in connection with purchases of cotton for these standards.

Mathematical specifications and tolerances have been established for each staple-length type to facilitate more rigid selection of new bales to replace exhausted or discarded bales. As a result, the present staple-length types constitute the most accurate and uniform series obtainable to date.

COLOR WORK

Color work undertaken at the request of the Army has consisted of the development of color data for four principal projects as follows: (1) Color data of natural terrestrial objects such as soils and foliage in relation to camouflage work; (2) data applicable to color-vision tests; (3) data relative to color tolerances for use in specifications for purchases of military supplies, paints, and textiles; (4) selection of an illuminant for color matching.

In connection with camouflage, color work was carried on at the request of the Engineer Board at Fort Belvoir, Va. It consisted of the assembling of colorimetric and spectrophotometric data for samples representative of soil colors, both domestic and foreign, as well as a wide collection of green and dormant foliage.

Work relating to color-vision tests was performed in cooperation with the Inter-Society Color Council and had to do with three methods of testing color vision, none of which can be memorized by the subject of the test. They are designed primarily for discovering departures from normal color vision for the selection of personnel for air and sea duty. These tests, when completed, will be useful for the selection of inspectors and graders for service work with the FDA.

Color-tolerance work in connection with specifications for Government purchases has been conducted in collaboration with the Philadelphia Quartermaster Depot and the Philadelphia Navy Yard testing laboratory.

FIBER PROPERTIES VERSUS SPINNING PERFORMANCE AND YARN QUALITY

Data have now been assembled for more than 2,000 case-historied cottons for which complete fiber and spinning tests have been made in the FDA's laboratories. These data perhaps represent the most comprehensive set of data in existence as a basis for statistical analyses to ascertain the precise relationship between specific fiber properties and specific items of spinning quality, such as processing performance and yarn strength and appearance. Considerable progress has been made in devising and testing suitable statistical procedures for analyzing these data.

It is anticipated that when definite relations between fiber properties and spinning quality have been worked out, the information will enable cotton breeders, cotton growers, cotton merchants, and cotton spinners to evaluate the relative importances of different fiber properties for specific uses. This will not only expedite cotton quality improvement, facilitate marketing according to spinning value, and enable spinners to select cottons possessing the fiber properties most suitable for specific uses, but will also aid in improving the competitive position of American cotton in relation to competitive raw materials and foreign-grown cotton.

SPINNING AND FIBER-TESTING SERVICE

Since service testing was made available on a fee basis in 1941, cotton breeders have used the results as a basis for making plant selections in their efforts to produce superior strains of cotton. A technique developed in the laboratory requires only 5 pounds of lint to make reliable manufacturing and fiber tests. This has made it possible to determine the manufacturing value of new varieties several years before seed stocks are multiplied and sold to farmers.

Rigid specifications for goods furnished the armed forces have been responsible for some manufacturers' using the testing service in control work. Some manufacturers and merchants are using the service to determine which communities are producing cottons having the qualities they need. As sources of cotton suitable for special purposes are located by mills, it is reasonable to expect that competition will lead to higher prices for growers in the communities producing superior cotton.

During the year the FDA received 149 requests for service-testing work, involving one or more tests on each of 3,074 samples. Cotton breeders submitted 2,408 of these samples and the other 666 were submitted by manufacturers and others.

Manufacturing and fiber tests are made on a cooperative basis for State and other Federal agencies participating in the cotton-improvement programs. Some of these investigations result from cooperative agreements with State agencies but many involve breeding and variety-testing work done through cooperative arrangements

with the Bureau of Plant Industry, Soils, and Agricultural Engineering.

Because of the widespread interest in long-staple cottons that are required to meet specifications for special products used by the armed services, a test was made to determine the relative manufacturing values of the more widely used varieties. Only better grades of foreign cottons are imported, so these were compared with cottons from experimental and commercial plantings grown in the Southwest during the 1942 season. The test showed that S×P, an American Egyptian variety, could be manufactured into stronger yarns than imported Egyptian, Sudan, or Peruvian growths. The S×P variety, however, did not make yarns of as good appearance as the best Egyptian cotton tested, but it compared favorably in this respect with four other Egyptian samples, and with the Sudan and Peruvian cottons.

Some farmers and agricultural leaders in the Southwest have been considering the possibility of replacing S×P with Wilds 13, a long-staple upland-type cotton. This test showed conclusively, however, that the Wilds 13 variety is not a satisfactory substitute for the S×P variety but that it could satisfactorily replace some of the imported varieties.

COTTON QUALITY STATISTICS

Figures compiled during the year showed that although there is no shortage of cotton as such, there is a scarcity of the better qualities, especially the higher grades, and a large surplus of the lower-grade short staples which have moved into the Commodity Credit Corporation loan in large volume.

As soon as sufficient cotton was ginned from the new crop in the various States and districts, reports were issued for each State and district as of the date figures on ginnings were released. These reports were released throughout the season from four principal field offices located at Atlanta, Memphis, Dallas, and El Paso. Reports on the grade and staple length of upland, American Egyptian, and sea-island cotton ginned in the United States were released periodically from Dallas.

During June and July 1942, and to some extent in earlier months, there was a great deal of talk about the "shortage" of long-staple upland cotton. Private estimates of the carry-over of such cotton were as low as 200,000 bales. Carry-over statistics provided by this work showed 640,000 bales of long-staple cotton on hand August 1, 1942, with much of it held by mills. Little more was heard about the so-called shortage. It should be pointed out in this connection, however, that although there has been no shortage of the longer-staple cottons, stocks of such cotton are being reduced, and it is important that increases in production of such cotton be encouraged.

The average staple length of cotton has shown almost steady improvement over the last 15 seasons, as shown by the following figures:

| Period: | Average staple length in 32ds of an inch | Period: | Average staple length in 32ds of an inch |
|---------|--|---------|--|
| 1928-32 | 30.06 | 1940-41 | 31.92 |
| 1933-37 | 30.67 | 1941-42 | 31.98 |
| 1938-39 | 31.66 | 1942-43 | 31.90 |
| 1939-40 | 31.29 | | |

Although 1942-43 was generally considered to be a short-staple season, the crop averaged only slightly shorter than in the previous year and was approximately $\frac{1}{16}$ inch longer than that for 1928-29, the first year for which quality statistics were available.

The grade of the crop as contrasted with staple length has shown considerable decline in recent years as shown by the following grade indexes:

| Period: | Grade index | Period: | Grade index |
|---------|-------------|---------|-------------|
| 1928-32 | 98.9 | 1940-41 | 96.2 |
| 1933-37 | 97.8 | 1941-42 | 94.1 |
| 1938-39 | 98.2 | 1942-43 | 95.0 |
| 1939-40 | 97.3 | | |

Although grade is determined to a large extent by climatic conditions, especially at harvest time, and the shortage of pickers last season caused unavoidable reductions in grade, these figures show the need of intensive work for grade improvement such as has resulted in a substantial improvement in the length of staple.

SERVICE FOR ORGANIZED COTTON-IMPROVEMENT GROUPS

The Smith-Doxey Act provides a cotton-classing and market news service for farmers organized to promote the improvement of cotton. This service is now 5 years old. Its growth can probably best be illustrated by the figures in table 27.

These figures show a tendency toward large groups and a larger volume of classification per member. The increase in the size of groups is beneficial because it means a large volume of a single variety of cotton grown over a wider area. There are now many county-wide groups. The large expansion of this work in the western part of the Cotton Belt, where farms are larger, explains in part the increased number of samples submitted per group.

At the end of each ginning season a detailed report showing the grade and staple length of cotton submitted by groups for classification is prepared and furnished ginners, group representatives, and certain State and Federal agencies interested in cotton improvement. These reports are useful to ginners in checking the quality of their work and are of interest to others in measuring the extent of improvement in quality and in comparing the results obtained from different varieties of cotton.

TABLE 27.—*Growth of cotton classing and market news service for farmers organized to promote the improvement of cotton*

| Season | Groups | Members | Samples classed | Season | Groups | Members | Samples classed |
|---------|---------------|-------------------|-------------------|----------------------|------------------|--------------------|-----------------------|
| 1938-39 | Number 312 | Number 18, 589 | Number 83, 592 | 1941-42 | Number 2, 511 | Number 279, 128 | Number 2, 520, 083 |
| 1939-40 | 918 | 64, 399 | 265, 090 | 1942-43 ¹ | 2, 465 | 281, 100 | 3, 567, 095 |
| 1940-41 | 1, 573 | 128, 216 | 1, 530, 764 | | | | |

¹ Preliminary

COTTON-IMPROVEMENT PLANTING-SEED PROGRAM

The cotton-improvement planting-seed program is intended to encourage the growth of a single improved variety of cotton by all

growers in large areas where growing conditions are uniform, in order to improve cotton quality, to increase yields per acre, and to standardize production by the elimination of the inferior varieties now being planted. This program, announced in September 1942, was operated in five States in preparation for the 1943 crop year.

One of the factors limiting growth of the one-variety movement has been the lack of adequate supplies of pure planting seed at reasonable prices. As an example of how this program has stimulated the increase of good seed, the progress made in Tennessee might be cited. The operating committees in Tennessee were able to locate only about 130 tons of first-year-increase seed for the 1943 program but they now estimate that, with reasonable yields from the foundation seed introduced under the 1943 program, 2,200 tons of first-year-increase seed will be available in that State for the 1944 season.

MARKET NEWS

Daily and weekly reports were released for distribution directly to farmers and to the cotton and cottonseed industry. Information in these reports was published in local and other newspapers and in farm and trade periodicals. Field offices also made it a practice to furnish special information on markets and prices to local papers and radio stations.

Market news offices were maintained during the 1943 fiscal year at Memphis, Atlanta, Dallas, and El Paso. But with regionalization of the market news offices for cotton, such offices will be maintained in the future at Atlanta, Dallas, and San Francisco.

Price quotations are obtained from Raleigh, Charleston, Columbia, Atlanta, Augusta, Savannah, Mobile, Montgomery, New Orleans, Greenwood, Jackson, Memphis, Little Rock, Altus, Oklahoma City, Corpus Christi, El Paso, Dallas, Galveston, Houston, Lubbock, Phoenix, and Bakersfield.

Cottonseed reviews were issued during the active marketing season and whenever warranted during the remainder of the season from Atlanta, Memphis, and Dallas. These reviews contained (1) the high, low, and average grade of cottonseed by counties of all cotton-growing States, except Arizona, California, and New Mexico, and District 6 of Texas; (2) wagon-lot prices per ton by counties; and (3) base-grade prices calculated on the basis of the average grade in each county.

COTTON BAGGING FOR COTTON BALES

The indemnity program for the development of a new use for cotton as a wrapping material for cotton bales, begun in 1939, received added impetus during the last fiscal year. This was due substantially to the adoption by the cotton industry of an amendment to the buying and selling rules whereby a uniform allowance of 7 pounds is made to offset the lighter tare of cotton wrappers.

Four concerns manufactured approximately 1,926,000 patterns during the 1942 calendar year, using in all about 21,000 bales of low-grade cotton. This compared with a production of 1,172,000 patterns in 1941, using 13,000 bales.

COTTON INSULATION

Considerable progress was made in getting cotton specified as being acceptable for home insulation. At the close of the year, seven concerns held approved applications for the manufacture, sale, and delivery of the material. Five of the concerns were already in production and two others expected to begin processing during the fall of 1943.

Production plants are widely scattered throughout the United States and are located in close proximity to many major consumer markets. Two concerns with Nation-wide sales organizations and several smaller establishments are engaged in distribution of cotton insulation made under the Department's program.

BINDER TWINE

Binder-twine manufacturers applied for and received approved applications for the use of approximately 22 million pounds of cotton yarns under a new program put into effect by the FDA during the year. The cotton yarn is mixed with components in a manner to represent 25 percent of the over-all weight of the finished product. To June 30, 1943, approximately 4,724,000 pounds of the yarn had been used, requiring the use of slightly more than 11,000 bales of cotton.

NAVAL STORES

Federal distribution work on naval stores included administration of the U. S. Naval Stores Act, providing for inspection, the development of standards, and regulation of marketing practices. Service and regulatory work in connection with these products was greatly expanded during the year because of war requirements and special requests from the naval stores industry. A considerable part of the service work had been conducted under a cooperative agreement with the American Turpentine Farmers' Association, under which fees are handled through trust-fund accounts and are available to cover increased costs of operation.

INSPECTION OF NAVAL STORES

A total of 432,262 barrels and drums of rosin were inspected and certified at stills and warehouse yards during the 1943 fiscal year, compared with 340,556 drums during the previous fiscal year; the number of rosin-inspection certificates issued totaled 21,309 compared with 20,124 the previous year; the number of lots of turpentine certified totaled 3 compared with none the year before; and the number of samples of turpentine and rosin submitted for request analysis or test, including storage-tank test samples, totaled 85, compared with 35 the year before.

In addition to gum rosin, the FDA also is furnishing to allied nations such products as gum and wood turpentine, wood rosin, pine oil, pine tar, pinene, dipentine, tall oil (liquid rosin), rosin oil, and several proprietary products. These items are purchased on direct contract from private manufacturers. All shipments of these materials have been officially inspected and analyzed before certification

for shipment. In this way delivery of material that will meet the needs of our allies is assured.

The number of lots inspected for shipment to our allies totaled 236; the number of barrels of wood rosin certified, 38,477; barrels of other naval stores products certified, 38,988; the number of samples analyzed, 165; and the number of lots refused certification due to nonconformity with specifications, 4.

REGULATORY WORK

The number of lots or shipments of naval stores given attention through official sampling and analysis totaled 132, a slight increase over the previous year's operations. The single case involving prosecution, which resulted in conviction and payment of a \$600 fine, was based on the substitution of destructively distilled wood turpentine in part for an article sold as pure gum spirits of turpentine.

STANDARDIZATION

A method was developed for detecting and proving adulteration of gum turpentine or steam-distilled wood turpentine with destructively distilled wood turpentine. The method was based on the change in what is known as the kauri-butanol value, which is a measure of solvent power of the turpentine.

Work also was done on a method that will show the quantity of the higher alcohols in pine oil, with the idea of including an alcohol requirement in the standard specifications for pine oil.

Other studies were made on the viscosities of various grades of pine tar, analysis of tall oil, and the volatile matter in rosin. In most of these activities, the FDA worked in close collaboration with the American Society for Testing Materials, through its Committee on Naval Stores.

STANDARDS FOR HEMP

Because of the probable need for a greatly increased production of hemp in this country and the eventual necessity of establishing grades as a basis for price-supporting programs to assure the desired production, a meeting of industry and Government people was held in August 1942 to consider the advisability of establishing standards for American hemp. It was unanimously agreed at this meeting that standards should be established, and proposed grade descriptions were drawn up.

The standards for hemp line and tow were promulgated on September 25, 1942, and the promulgation of regulations governing the grading of hemp line and tow followed on October 22, 1942. The regulations provide, among other things, for the sale of copies of the various standards represented in physical form and for the issuance of such copies for demonstration purposes. The regulations also contain authority under which a hemp and tow inspection and grading service may be established if required.

TOBACCO

Distribution of tobacco during the 1943 year was characterized by a very strong demand for all types. Prices received by farmers for their 1942 crops were materially higher than for the 1941 crops, particularly

for flue-cured and burley tobaccos. Prices for most grades of burley, as a matter of fact, were at ceiling levels throughout the season.

The exceptionally strong demand for Burley leaf and the resulting willingness of numerous buyers to pay ceiling prices for most individual lots of tobacco made some form of allocation of the crop desirable. During December 1942 much of the tobacco was arbitrarily allocated among the buyers by auctioneers. It was apparent, however, that such a procedure would not work, because much speculative buying and confusion resulted. Consequently, in order to provide for a more fair and systematic distribution of the crop, the Food Distribution Administration issued an allocation order, FDO No. 4, effective January 7, 1943.

Under this order, manufacturers could purchase not to exceed 90 percent of the average poundage purchased in the 3 previous years, including tobacco purchased on auction markets and from producers either directly or through dealers, and less the amount purchased prior to the effective date of the order. A dealer buying for his own account could purchase the average poundage purchased by him in the 3 previous years on auction markets or from producers, less the amount purchased by him prior to the date of the order. Adjustments were permitted for those not active in the market in any or all of the 3 preceding years. These provisions did much to eliminate confusion on auction markets.

Increasing problems of supply brought about development of a plan for controlling distribution of the 1943 crop of flue-cured tobacco. As a result, on June 29, 1942, the War Food Administrator allocated the 1943 crop to domestic manufacturers and dealers and to various importing countries and also allocated the exports to be permitted during the 1943-44 year of both old- and new-crop tobacco. This plan was designed to provide for the immediate needs of all allies and to meet other export requirements, and at the same time to give domestic manufacturers and dealers as a group a fair share of the crop.

Other orders issued during the year required delivery of certain grades of fire-cured and dark air-cured tobacco to manufacturers of nicotine insecticides, and prevented future-contract purchases of most types of cigar filler and cigar binder.

On August 12, 1943, a revised form of diversion program for dark tobaccos was initiated, under which payments were made directly to the manufacturers of insecticides rather than to the grower associations. These payments were made at a rate equal to the difference between the approved purchase price, and 3.5 or 2.5 cents per pound, depending on the average nicotine content of the tobacco type. These payments at first could not exceed 7 cents or 6 cents, depending on nicotine yield, but by an amendment issued on April 19, 1943, the maximum payment permissible for all types was raised to 12.5 cents. Approximately 22.5 million pounds of tobacco were diverted under the program, from which was produced about 1.5 million pounds of nicotine insecticides needed to aid in achieving crop goals and to replace insecticides formerly imported from the Far East.

INSPECTION

At the close of the 1943 fiscal year all of the 138 auction markets in the country had been designated for inspection with the exception of

4 light air-cured tobacco markets in Maryland (table 28). Mandatory inspection service had been extended during the same period to 101 of these markets, an increase of 17 during the fiscal year. Although this service is being expanded to reach all designated markets as rapidly as possible, it is not probable that all the remaining uninspected markets will be reached in 1944 due to the serious shortage of trained tobacco inspectors. A vigorous training program is planned, however, in an attempt to have available sufficient trained inspectors to cover all designated markets in 1945.

TABLE 28.—*Growth of tobacco inspection, 1936-37 to 1942-43*

| Crop year | Markets inspected | Sets of buyers | Tobacco inspected at auction markets | |
|-----------|-------------------|----------------|--------------------------------------|---------------------|
| | | | Tobacco | Total auction sales |
| 1936-37 | 20 | 26 | 1,000 pounds | Percent |
| 1937-38 | 22 | 28 | 146,114 | 14 |
| 1938-39 | 31 | 41 | 208,234 | 15 |
| 1939-40 | 41 | 58 | 255,231 | 21 |
| 1940-41 | 45 | 66 | 465,000 | 28 |
| 1941-42 | 84 | 114 | 568,000 | 34 |
| 1942-43 | 101 | 145 | 698,000 | 63 |
| | | | 875,433 | 68 |

TABLE 29.—*Status of tobacco inspection*

| Type of tobacco | Auction markets | Auction markets designated as of June 30, 1943 | 1942-43 season | | | |
|-------------------|-----------------|--|-------------------|--------------|--------------|---------|
| | | | Inspected markets | Sales | | |
| | | | | Total | Inspected | |
| Flue-cured | Number | Number | Number | 1,000 pounds | 1,000 pounds | Percent |
| Fire-cured | 75 | 75 | 142 | 799,941 | 435,213 | 54.4 |
| Burley | 12 | 12 | 12 | 369,995 | 62,847 | 89.8 |
| Southern Maryland | 43 | 43 | 43 | 342,703 | 342,703 | 100.0 |
| Dark air-cured | 4 | 8 | 8 | 34,471 | 34,670 | 99.6 |
| Total | 2 142 | 2 138 | 2 105 | 1,281,911 | 875,433 | 68.3 |

¹ 5 of these markets were covered only from November 9, 1942, to the end of the season.

² Actual number is 4 less because 4 markets selling 2 types of tobacco each are duplicated.

³ Includes country sales which were not inspected.

Table 29 does not give a complete picture of inspection services performed. The total sales shown are producers' sales on inspected markets and the total inspected represents only the initial inspection for such first-hand sales. The total volume for inspection is increased by rejections and resales. In addition to the inspection of producers' sales, approximately 8,400,000 pounds of fire-cured tobacco of types 21, 22, and 23 were inspected in prizeries. Approximately 20 million pounds of fire-cured and dark air-cured tobacco were inspected for delivery to nicotine manufacturers under the diversion program. Tobacco inspectors also inspected about 75,000 pounds of nicotine alkaloids and nicotine sulphate and about 262,000 pounds of manufactured tobacco for Government use.

MARKET NEWS

The method of collecting market prices instituted in the burley district in the 1941-42 season was put into operation during the last year in the flue-cured tobacco district. Under this plan at selected key markets, price recorders follow all sales, copying information from the warehouse sales tickets. The information is then summarized and telephoned from the key markets to district suboffices for consolidation. Reports are issued on the basis of combined district averages.

The new plan promotes economy, efficiency, and speed in operation. In the burley district, weekly reports which are considered sufficient coverage, in view of price ceilings and allocations, are replacing the daily reports formerly issued.

The tobacco market news service in cooperation with the Agricultural Adjustment Agency has developed a system whereby up-to-date reports of the volume of sales conducted and the general average price are available. The availability of this information is particularly important under the present conditions for use in making policy decisions, program planning, and the establishment of price ceilings.

During the fiscal year 1943 there were distributed to growers in the markets 492,359 mimeographed price reports. The reports have been increasingly valuable adjuncts to governmental planning in connection with such wartime activities as procurement, price ceilings, and allocations.

STOCKS REPORTS AND PUBLICATIONS

The quarterly stocks reports on leaf tobacco owned by manufacturers and dealers have been expanded to include more editorial comment and the reporting techniques have been revised to show more accurately the effect of Government-owned stocks.

An accurate appraisal of the volume and quality of existing supply is indispensable to an understanding of conditions affecting the market. The information reported in the stocks reports as to quantities, types, form, and groups of grades in the supply is now used extensively not only by the trade and for research, but also in effectively planning production goals, allocations, and distribution orders. The annual market reviews, issued for each of the major groups of tobacco types, and the Annual Report on Tobacco Statistics, have also been revised and incorporate new material especially useful in affecting wartime marketing problems.

TRAINING

The educational program continued to demonstrate to approximately 46,000 tobacco growers during the year the grades, the best methods of handling and preparing the tobacco for market, and the value and use of Federal inspection and market reports on the auction floor. The decrease in participation was due largely to transportation difficulties, decrease in farm population, and pressure of increased work for those remaining on the farms. Preliminary reports on the current-year activities indicate possibilities of increase for this season. The volume of this work is indicated in table 30.

TABLE 30.—*Tobacco demonstration work, 1940-43*

| Item | 1940 | | 1941 | | 1942 | | 1943 | |
|---|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| | Num- ber | Attend- ance | Num- ber | Attend- ance | Num- ber | Attend- ance | Num- ber | Attend- ance |
| Farm demonstrations..... | 1,343 | 27,021 | 1,561 | 25,614 | 1,395 | 19,672 | 1,391 | 17,441 |
| Farmers' meetings..... | 126 | 5,304 | 260 | 8,270 | 108 | 3,408 | 101 | 3,450 |
| School demonstrations..... | 504 | 19,971 | 630 | 23,582 | 653 | 25,121 | 559 | 20,172 |
| Farm visits and other contacts..... | | 3,279 | | 5,084 | | 4,208 | 4 | 5,084 |
| Exhibits at county fairs and farm conventions..... | 24 | | 31 | | 25 | | 17 | |
| Training courses for inspectors..... | | | 2 | 35 | 6 | 138 | 4 | 77 |
| Training courses at agricultural colleges..... | | | 7 | 247 | 4 | 196 | 5 | 146 |
| Grading tests held in field..... | | | 14 | 196 | 6 | 41 | 4 | 46 |
| Pieces of literature distributed ² | 86,687 | | 117,440 | | 62,500 | | 62,000 | |

¹ Many fairs have been discontinued for the duration.² Printing suspended for the duration of war. Present stocks of printed literature must be spread over next several years.

GRADE STANDARDIZATION RESEARCH

Research has for a number of years been carried on to determine the relation and importance of various elements of quality in tobacco, the effect of fermentation processes, and desirability for various manufacturing purposes. These results are applied in developing standard grades for the 26 types of American-grown tobacco. Further refinements were made during the past year in the proposed grades for types 42, 43, 44, 54, and 55, while tentative grades were demonstrated in Maryland tobacco, type 32.